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RESERVES OF CRUDE OIL, GAS, NATURAL GAS LIQUIDS AND SULPHUR PROVINCE OF ALBERTA

DECEMBER 31, 1963

DONATED JAN 9 1975

OIL AND GAS CONSERVATION BOARD
603 SIXTH AVENUE SOUTH WEST • CALGARY, ALBERTA

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RESERVES OF CRUDE OIL, GAS, NATURAL GAS LIQUIDS AND SULPHUR PROVINCE OF ALBERTA

DECEMBER 31, 1963

OIL AND GAS CONSERVATION BOARD

603 SIXTH AVENUE SOUTH WEST • CALGARY, ALBERTA

PRICE $2.00 (Sales Tax Included)

RESERVES OF CRUDE OIL, GAS, NATURAL GAS LIQUIDS AND SULPHUR

PROVINCE OF ALBERTA

DECEMBER 31, 1983

PRICE $3.00 (Sales Tax included)

603 SIXTH AVENUE SOUTH WEST • CALGARY, ALBERTA

OIL AND GAS CONSERVATION BOARD

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I. THE ESTABLISHED RESERVES OF GAS IN THE PROVINCE OF ALBERTA

The Board estimates the remaining established reserves of marketable gas in Alberta at December 31, 1963, to be some 32.9 trillion cubic feet - equivalent to 34.7 trillion cubic feet of 1000 Btu gas. The present estimate represents an increase of some 0.5 trillion cubic feet since December 31, 1962. Details of the reserves are given in the following tabulation:

	Actual Basis	1000 Btu Basis
Established Marketable Gas at December 31, 1962, Tcf	32.4	34.3
Addition to Reserves during 1963, Tcf	1.3	1.3
Marketable Gas Produced during 1963, Tcf	0.8	0.9
Established Marketable Gas at December 31, 1963, Tcf	32.9	34.7

Almost all of the increase in reserves has been the result of the development and extension of known reserves. During 1963 only some 0.1 trillion cubic feet of gas has been attributed to new discoveries - an increase below the trend of the last few years.

The Board's estimate consists of reserves of solution, associated, and non-associated gas. The following tabulation is a comparison on an actual heating value basis of the 1962 and 1963 estimates of remaining established marketable reserves in the three classifications:

Classification Of Reserves	At December 31, 1962	At December 31, 1963	Change
Solution	2.9	2.7	-0.2
Associated	4.0	4.0	-
Non-Associated	25.5	26.2	+0.7
TOTAL RESERVES	32.4	32.9	+0.5

The more significant changes in the 1963 estimate of reserves have occurred in the following areas:

Area	Dec. 31, 1962 Estimate, Bcf	Dec. 31, 1963 Estimate, Bcf	Change Bcf	Reason for Change
Ansell	80	-	- 80	Included in Edson Area.
Edson	-	900	+900	New drilling and amalgamation of areas called Ansell, Rodney, Moose Creek, and Erith.
Harmattan-Elkton	1,117	1,063	- 54	Production, also reservoir volume reduced as the result of a new well.
Jumping Pound West	-	100	+100	New discovery.
Kaybob	371	418	+ 47	Additional drilling.
Kaybob South	-	80	+ 80	Additional drilling, also includes area called Tony Creek.
Marten Hills	70	141	+ 71	Additional drilling.
Olds	140	200	+ 60	Area enlarged to include Olds South and Netook Areas.

Area	Dec. 31, 1962 Estimate, Bcf	Dec. 31, 1963 Estimate, Bcf	Change Bcf	Reason for Change
Pembina	1,000	936	- 64	Production.
Pine Creek	721	464	-257	Production, and reservoir volume reduced as a result of a new well.
Simonette	90	50	- 40	Increased reservoir and surface losses.
Twining and Twining North	20	64	+ 44	Additional drilling and inclusion of solution reserves.
Windfall	411	493	+ 82	Additional drilling.

The Board in its February, 1964, report to the Lieutenant Governor in Council in connection with an application by Trans-Canada Pipe Lines Limited, estimated the remaining established reserves of marketable gas at September 30, 1963, to be some 33.2 trillion cubic feet on an actual heating value basis. This is some 0.3 trillion more than the present estimate. The chief reason why the present estimate is less than the September estimate is the drilling of a new non-productive well in the Pine Creek Field, reducing the Board's estimate of marketable gas by 257 billion cubic feet.

Details of the Board's estimate of established reserves is presented in Table I-1. The table does not show individually fields or areas having a marketable reserve of less than 10 billion cubic feet unless the reserve is supplying a market. However, the sum of these reserves is shown at the end of the table, and is included in the Provincial total. The location of the fields and areas contained in Table I-1 is shown on Figure I-1.

TABLE I-1

ESTABLISHED RESERVES OF GAS IN THE PROVINCE OF ALBERTA, DECEMBER 31, 1963

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1963 BCF	REMAINING MARKETABLE GAS TO DEC. 31, 1963 BCF	ESTIMATED HEATING VALUE BTU PER CU. FT.	REMAINING MARKETABLE GAS AT 1000 BTU PER CU. FT. BCF	REMARKS
ACHESON	VIKING	14	25/5	10	1	9	1020	9	GAS SOLD TO NORTH-WESTERN UTILITIES, LIMITED.
	BASAL BLAIRMORE	37	20/15	25	2	23	1020	23	
	LEDUC SOLUTION	81	45/55	20	5	15	1140	17	
ACHESON EAST	BASAL BLAIRMORE	12	15/5	10	-	10	1090	11	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
ADEN	BOW ISLAND	5	20/5	4	-	4	1000	4	GAS SOLD TO CANADIAN-MONTANA GAS COMPANY LTD.
	BASAL COLORADO	6	15/5	5	1	4	1000	4	
	MANNVILLE	2	10/5	2	-	2	1000	2	
	SUNBURST-ELLIS	16	20/5	12	-	12	1040	12	
	MISSISSIPPIAN	19	10/10	15	2	13	1040	14	
ALEXANDER	BASAL BLAIRMORE	110	15/5	90	81	9	1060*	10	GAS SOLD TO NORTH CANADIAN OILS LIMITED.
ALIX	BASAL BLAIRMORE	12	10/5	10	-	10	1090	11	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	NISKU ASSOCIATED	7	15/10	5	-	5	1130	6	
ANTELOPE	VIKING	39	20/5	30	-	30	1020	31	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BANFF	11	20/5	8	-	8	1020	8	
ATHABASCA	GRAND RAPIDS	6	15/5	5	1	4	1030	4	SUPPLIES LOCAL UTILITY.
	WABAMUN	4	10/5	3	-	3	1020	3	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
ATHABASCA EAST	WABAMUN	2	10/5	2	1	1	1000	1	SUPPLIES LOCAL UTILITY.
ATLEE-BUFFALO	BOW ISLAND	120	25/5	85	5	80	960*	77	GAS SOLD TO TRANS-CANADA PIPE LINES LIMITED.
	BASAL COLORADO	7	15/5	6	-	6	1020	6	
	BASAL BLAIRMORE	72	20/5	55	1	54	960*	52	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1963 BCF	REMAINING MARKETABLE GAS TO DEC. 31, 1963 BCF	ESTIMATED HEATING VALUE BTU PER CU. FT.	REMAINING MARKETABLE GAS AT 1000 BTU PER CU.FT. BCF	REMARKS
Bantry	Milk River	46	20/5	35	-	35	960	34	Supplies local utility.
	Bow Island	20	20/5	15	-	15	970	15	Presently considered beyond economic reach.
	Basal Blairmore Associated	9	20/5	7	-	7	1160	8	
Bantry South	Second White Specks	4	20/5	3	-	3	970	3	Presently considered beyond economic reach.
	Bow Island	9	20/5	7	-	7	970	7	
Bashaw	Basal Blairmore	9	10/5	8	-	8	970	8	Presently considered beyond economic reach.
	Leduc Associated	7	15/30	4	-	4	1220	5	
Bawlf	Viking	11	25/5	8	-	8	1020	8	Presently considered beyond economic reach.
	Blairmore	3	20/5	2	-	2	1050	2	
Beaver Creek	Wabamun	94	15/50	40	-	40	1050*	42	
Beaverhill Lake	Viking	220	20/5	170	1	169	1000	169	Supplies local utility.
	Basal Blairmore	4	15/5	3	-	3	1000	3	
Belloy	Cadotte	5	20/5	4	-	4	1020	4	
	Notikewin	9	20/5	7	-	7	1000	7	
	Gething	62	15/5	50	-	50	1000	50	
	Mississippian	23	10/5	20	-	20	1120	22	
Bellshill Lake	Viking	6	25/5	4	-	4	1040	4	Presently considered beyond economic reach.
	Blairmore	37	15/5	30	-	30	990	30	
	Blairmore Associated	3	15/10	2	-	2	990	2	
Berland River	Leduc	440	10/25	300	-	300	1000	300	
Berland River West	Wabamun	24	10/30	15	-	15	1020	15	Presently considered beyond economic reach.
Bigoray	Blairmore	14	15/5	11	-	11	1080	12	
	Mississippian	13	15/10	10	-	10	1080	11	
Bigstone	Gething	23	10/5	20	-	20	1100	22	
	Dunvegan	29	10/5	25	-	25	1140	29	
	Leduc	74	10/25	50	-	50	930	47	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1963 BCF	REMAINING MARKETABLE GAS TO DEC. 31, 1963 BCF	ESTIMATED HEATING VALUE BTU PER CU. FT.	REMAINING MARKETABLE GAS AT 1000 BTU PER CU.FT. BCF	REMARKS
Bindloss	Viking	430	15/5	350	41	309	970*	300	Gas sold to Trans-Canada Pipe Lines Limited.
	Basal Blairmore	31	15/5	25	-	25	990	25	
Bittern Lake	Viking	3	25/5	2	-	2	1020	2	
	Basal Blairmore	43	15/5	35	-	35	1070	37	
Black Butte	Bow Island	21	15/5	17	1	16	1010	16	Gas sold to Canadian-Montana Gas Company Ltd.
	Basal Colorado	25	15/5	20	4	16	1000	16	
	Mannville	6	15/5	5	-	5	1000	5	
	Sunburst-Ellis	35	10/5	30	17	13	1000	13	
	Mississippian	12	15/5	10	1	9	1020	9	
Blindman River	Pekisko	23	10/5	20	-	20	1090	22	Presently considered beyond economic reach.
	Banff	18	10/5	15	-	15	1080	16	
Blueridge	Detrital	14	10/5	12	-	12	1100	13	Presently considered beyond economic reach.
	Mississippian	1	20/5	1	-	1	1130	1	
Bolloque Lake	Viking	3	25/5	2	-	2	1040	2	Presently considered beyond economic reach.
	Basal Blairmore	11	25/5	8	-	8	1100	9	
Bonnie Glen	Viking	3	15/10	2	-	2	1050	2	Gas sold to North-western Utilities, Limited.
	Blairmore	5	10/10	4	2	2	1100	2	
	Leduc Associated	430	10/15	330	4	326	1220	398	
	Leduc Solution	510	40/25	230	42	188	1220	229	
Bonnyville	Blairmore	5	20/5	4	2	2	980	2	Supplies local utility.
Boundary Lake South	Mississippian	27	10/5	23	7	16	1040*	17	Gas sold to West-coast Transmission Company Limited.
Bow Island	Bow Island	20	20/5	15	-1	16	1110	18	Canadian Western Natural Gas Company Limited storage reservoir.
Boyle-Mustang-Amisk Lake	Blairmore	7	25/5	5	-	5	1000	5	Presently considered beyond economic reach.
	Nisku	6	15/5	5	-	5	990	5	
Braeburn	Cadomin	10	15/5	8	-	8	1060	8	
	Triassic	26	20/5	20	-	20	1090	22	
	Permo-Penn	52	15/10	40	-	40	1030	41	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1963 BCF	REMAINING MARKETABLE GAS TO DEC. 31, 1963 BCF	ESTIMATED HEATING VALUE BTU PER CU. FT.	REMAINING MARKETABLE GAS AT 1000 BTU PER CU.FT. BCF	REMARKS
Brazeau River	Mississippian	190	10/10	150	-	150	1040	156	Presently considered beyond economic reach.
Brooks	Milk River	9	20/5	7	3	4	990	4	Supplies local utility.
Brooks North-East	Bow Island	14	25/5	10	-	10	960	10	Supplies local utility.
	Basal Colorado	1	20/5	1	-	1	1000	1	
	Mannville	22	20/5	17	2	15	1030	15	
	Detrital	11	15/5	9	-	9	1030	9	
Brown Creek	Mississippian	52	15/10	40	-	40	970	39	Presently considered beyond economic reach.
Burnt River	Peace River	2	10/5	2	-	2	1010	2	Presently considered beyond economic reach.
	Bluesky	9	10/5	8	-	8	1020	8	
Burnt Timber	Mississippian	170	10/20	120	-	120	1080	130	Presently considered beyond economic reach.
Campbell-Namao	Basal Blairmore Associated	29	10/5	25	8	17	1020	17	Gas sold to Canadian Industrial Gas Limited.
	Basal Blairmore Solution	6	40/20	3	1	2	1020	2	
Carbon	Viking	7	20/5	5	-	5	1020	5	Gas sold to Canadian Western Natural Gas Company Limited.
	Blairmore	130	10/5	110	4	106	1100	117	
	Basal Blairmore	3	20/5	2	-	2	1100	2	
	Mississippian	11	10/5	9	-	9	1080	10	
Caroline	Basal Blairmore	19	10/10	15	-	15	1070	16	
Carson Creek	Beaverhill Lake	240	10/15	180	-	180	1050	189	
Carson Creek North	Beaverhill Lake Associated	28	15/15	20	-	20	1100	22	
	Beaverhill Lake Solution	420	55/20	150	-	150	1100	165	
Carson Lake	Mississippian	12	10/10	10	-	10	1050	11	Presently considered beyond economic reach.
Carstairs	Basal Blairmore	5	15/10	4	-	4	1100	4	Gas sold to Trans-Canada Pipe Lines Limited.
	Mississippian	1100	10/10	920	86	834	1100*	917	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1963 BCF	REMAINING MARKETABLE GAS TO DEC. 31, 1963 BCF	ESTIMATED HEATING VALUE BTU PER CU. FT.	REMAINING MARKETABLE GAS AT 1000 BTU PER CU.FT. BCF	REMARKS
CESSFORD	VIKING	200	20/5	150	1	149	1020	152	GAS SOLD TO TRANS-CANADA PIPE LINES LIMITED.
	BASAL COLORADO	1300	20/5	1000	161	839	1020	856	
	BASAL BLAIRMORE	420	15/5	340	28	312	1020	318	
CHIGWELL	BLAIRMORE	74	10/10	60	4	56	1100*	62	GAS SOLD TO TRANS-CANADA PIPE LINES LIMITED.
CHINOOK RIDGE	PADDY	12	10/10	10	-	10	1020	10	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	CADOTTE	31	10/10	25	-	25	1020	26	
	NOTIKEWIN	19	10/10	15	-	15	1020	15	
CHISHOLM	BLAIRMORE	12	10/5	10	-	10	1020	10	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
CLEAR HILLS	GETHING	1	15/5	1	-	1	980	1	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	TRIASSIC	8	10/5	7	-	7	1030	7	
	LEDUC	4	15/5	3	-	3	1070	3	
CLIVE	VIKING	4	20/5	3	-	3	990	3	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLAIRMORE	7	15/5	6	-	6	1020	6	
	NISKU ASSOCIATED	9	10/15	7	-	7	1150	8	
	LEDUC ASSOCIATED	5	15/25	3	-	3	1200	4	
COLD LAKE	BLAIRMORE	6	25/5	4	2	2	1000	2	SUPPLIES LOCAL UTILITY.
COMREY	SECOND SPECKS	4	20/5	3	-	3	940	3	GAS SOLD TO CANADIAN-MONTANA GAS COMPANY LTD.
	BOW ISLAND	29	10/5	25	12	13	940	12	
CONNORSVILLE	VIKING	7	15/5	6	-	6	990	6	
	BASAL BLAIRMORE	14	15/5	11	-	11	1130	12	
CONTROL	VIKING	22	15/5	18	-	18	970	17	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BASAL MANNVILLE	20	20/5	15	-	15	1030	15	
COUNTESS	BOW ISLAND	79	20/5	60	3	57	960*	55	GAS SOLD TO TRANS-CANADA PIPE LINES LIMITED.
	BASAL COLORADO	56	25/5	40	9	31	960*	30	
	BASAL BLAIRMORE	8	10/5	7	2	5	960	5	
	MISSISSIPPIAN	2	15/5	2	-	2	960	2	
	MISSISSIPPIAN ASSOCIATED	3	20/10	2	-	2	960	2	
GRAIGEND	GRAND RAPIDS	1	25/5	1	-	1	1000	1	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	GROSMONT	140	25/5	100	-	100	1000	100	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1963 BCF	REMAINING MARKETABLE GAS TO DEC. 31, 1963 BCF	ESTIMATED HEATING VALUE BTU PER CU. FT.	REMAINING MARKETABLE GAS AT 1000 BTU PER CU.FT. BCF	REMARKS
CROSSFIELD	CARDIUM SOLUTION	91	60/45	20	-	20	1120	22	
	BASAL BLAIRMORE	20	15/10	15	-	15	1100	17	
	MISSISSIPPIAN	1900	10/15	1450	91	1359	1080*	1468	GAS SOLD TO ALBERTA AND SOUTHERN GAS CO. LTD. AND WESTCOAST TRANSMISSION COMPANY LIMITED.
	WABAMUN	1400	15/50	600	17	583	1060*	618	
CROSSFIELD EAST	MISSISSIPPIAN	130	10/15	100	-	100	1120	112	
	WABAMUN	350	15/60	120	-	120	1060	127	
DIXONVILLE	GETHING	12	10/5	10	-	10	1000	10	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
DONALDA	VIKING	40	20/5	30	-	30	970	29	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BASAL BLAIRMORE	5	15/5	4	-	4	970	4	
	DETRITAL	5	20/5	4	-	4	990	4	
DOWLING LAKE	BASAL BLAIRMORE	5	20/5	4	1	3	1150	3	SUPPLIES LOCAL UTILITY.
DRUMHELLER	VIKING	4	25/5	3	-	3	1100	3	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLAIRMORE	23	10/5	20	-	20	1100	22	
DUVERNAY	VIKING	4	20/5	3	2	1	980	1	GAS SOLD TO WESTERN MINERALS LTD. PLANT AND SUPPLIES LOCAL UTILITY.
DYBERG	BELLY RIVER	3	20/5	2	-	2	950	2	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	VIKING	8	10/5	7	-	7	1000	7	
	BASAL BLAIRMORE	12	10/5	10	-	10	1020	10	
EAGLESHAM	GETHING	6	15/5	5	-	5	1000	5	
	CADOMIN	7	10/5	6	-	6	1060	6	
	MISSISSIPPIAN	99	10/5	85	-	85	1110	94	
EDSON	MISSISSIPPIAN	1200	10/15	900	-	900	1030	927	
ELK POINT	MANNVILLE	4	25/5	3	1	2	990	2	SUPPLIES LOCAL UTILITY.
ENCHANT	MILK RIVER	5	30/5	3	-	3	1030	3	
	BOW ISLAND	25	25/5	18	-	18	1030	19	
	BASAL BLAIRMORE	10	20/10	7	1	6	1030	6	GAS SOLD TO TRANS-CANADA PIPE LINES LIMITED.
	ELLIS	3	25/10	2	-	2	1030	2	
	MISSISSIPPIAN	5	15/10	4	-	4	1030	4	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1963 BCF	REMAINING MARKETABLE GAS TO DEC. 31, 1963 BCF	ESTIMATED HEATING VALUE BTU PER CU. FT.	REMAINING MARKETABLE GAS AT 1000 BTU PER CU.FT. BCF	REMARKS
Erskine	Viking	4	20/5	3	-	3	1040	3	Presently considered beyond economic reach.
	Blairmore Associated	20	15/10	15	-	15	1090	16	
	Leduc Associated	31	10/20	22	-	22	1070	24	
	Leduc Solution	19	35/60	5	-	5	1110	6	
Esther	Victoria	23	30/5	15	-	15	990	15	Presently considered beyond economic reach.
Etzikom	Bow Island	79	20/5	60	24	36	930	33	Gas sold to South Alberta Pipe Lines Ltd.
	Basal Blairmore	1	25/5	1	-	1	1010	1	
Excelsior	Viking	9	15/5	7	-	7	1000	7	
	Basal Blairmore	39	10/5	33	-	33	970	32	
Eyremore	Bow Island	15	30/5	10	-	10	960	10	Presently considered beyond economic reach.
Fairydell-Bon Accord	Viking	130	20/5	100	11	89	1020	91	Gas sold to North-Western Utilities, Limited.
	Basal Blairmore	19	15/5	15	-	15	1000	15	
Faust South	Gething	12	10/5	10	-	10	990	10	Presently considered beyond economic reach.
Fenn-Big Valley	Viking	20	20/5	15	4	11	1000	11	Gas sold to North-western Utilities, Limited and Trans-Canada Pipe Lines Limited.
	Nisku Solution	150	45/35	53	16	37	1110	41	
	Leduc Associated and Solution	11	35/45	4	1	3	1110	3	
Figure Lake	Viking	6	25/5	4	-	4	960	4	Presently considered beyond economic reach.
	Blairmore	11	15/5	9	-	9	1000	9	
	Nisku	19	15/5	15	-	15	1000	15	
Foremost	Bow Island	33	15/5	27	6	21	950	20	Gas sold to Canadian Western Natural Gas Company Limited.
Fort Kent	Blairmore	5	20/5	4	1	3	980	3	Supplies local utility.
Fort Saskatchewan	Viking	220	10/5	190	59	131	1000	131	Gas sold to North-western Utilities, Limited and Sherritt Gordon Plant.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1963 BCF	REMAINING MARKETABLE GAS TO DEC. 31, 1963 BCF	ESTIMATED HEATING VALUE BTU PER CU. FT.	REMAINING MARKETABLE GAS AT 1000 BTU PER CU.FT. BCF	REMARKS
Fox Creek	Viking	6	15/5	5	-	5	1160	6	Presently considered beyond economic reach.
	Gething	1	25/5	1	-	1	1160	1	
	Triassic	5	15/10	4	-	4	1160	5	
Fox Creek West	Gething	5	10/5	4	-	4	1020	4	
	Nisku	18	10/20	13	-	13	1150	15	
Garrington	Viking	24	20/10	17	-	17	1000	17	
	Blairmore	1	25/10	1	-	1	1010	1	
	Leduc	35	10/20	25	-	25	1020	26	
Ghost Pine	Blairmore	37	10/10	30	-	30	1010	30	Presently considered beyond economic reach.
	Blairmore Associated	8	20/10	6	-	6	1050	6	
	Mississippian	3	15/10	2	-	2	1070	2	
Gilby	Viking	4	20/5	3	-	3	1220	4	
	Basal Blairmore	130	10/15	100	2	98	1160	114	Gas sold to Trans-Canada Pipe Lines Limited.
	Jurassic	200	10/15	150	-	150	1020	153	
	Mississippian	330	10/15	250	21	229	1080	247	
	Banff	4	20/15	3	-	3	1100	3	
	Wabamun	7	10/20	5	-	5	1170	6	
Glen Park	Basal Blairmore	9	15/5	7	1	6	1140	7	Gas sold to North-western Utilities, Limited.
	Leduc Solution	17	40/20	8	2	6	1250	8	
Golden Spike	Viking	4	20/5	3	1	2	1050	2	Gas injected into Leduc zone.
	Blairmore	22	10/5	19	1	18	1050	19	
	Wabamum	26	10/15	20	6	14	1060	15	
	Nisku Associated	4	10/15	3	-	3	1220	4	
	Nisku Solution	6	35/20	3	1	2	1220	2	
	Leduc Solution	150	40/30	65	-8	73	1290	94	
Goodwin Lake	Jurassic	20	15/10	15	-	15	1070	16	Presently considered beyond economic reach.
Gordondale	Paddy	53	15/5	43	20	23	1000	23	Gas sold to West-coast Transmission Company Limited.
	Notikewin	4	20/5	3	-	3	1020	3	
	Gething	68	15/5	55	23	32	1050	34	
Greencourt	Jurassic-Detrital	65	15/10	50	-	50	1070	54	Presently considered beyond economic reach.
	Mississippian Associated	37	25/10	25	-	25	1130	28	
Hackett	Basal Blairmore	62	10/10	50	-	50	1100	55	
Hairy Hill	Viking	1	25/5	1	-	1	980	1	Gas sold to Western Minerals Ltd. plant.
	Blairmore	23	10/5	20	6	14	1000	14	

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FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1963 BCF	REMAINING MARKETABLE GAS TO DEC. 31, 1963 BCF	ESTIMATED HEATING VALUE BTU PER CU. FT.	REMAINING MARKETABLE GAS AT 1000 BTU PER CU.FT. BCF	REMARKS
HAMELIN CREEK	CADOTTE	3	20/5	2	-	2	1000	2	
	GETHING	4	15/5	3	-	3	1010	3	
	CADOMIN	21	15/5	17	3	14	1060	15	SUPPLIES LOCAL UTILITY.
HAMILTON LAKE	VIKING NON-ASSOCIATED AND ASSOCIATED	14	25/5	10	-	10	1040	10	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	UPPER MANNVILLE	1	15/5	1	-	1	1040	1	
HARMATTAN EAST	BLAIRMORE	4	20/10	3	-	3	1020	3	
	MISSISSIPPIAN ASSOCIATED	1200	10/15	900	-4	904	1080	976	
	MISSISSIPPIAN SOLUTION	150	35/20	80	11	69	1280	88	INJECTED INTO GAS CAP.
HARMATTAN-ELKTON	MISSISSIPPIAN	69	10/20	50	1	49	1040	51	INJECTED INTO GAS CAP.
	MISSISSIPPIAN ASSOCIATED	1300	10/20	900	-19	919	1080	993	RESERVOIR BEING CYCLED.
	MISSISSIPPIAN SOLUTION	170	35/20	88	23	65	1280	83	INJECTED INTO GAS CAP.
	LEDUC	83	10/60	30	-	30	1100	33	
HEART RIVER	CADOTTE	2	15/5	2	-	2	1000	2	SUPPLIES LOCAL UTILITY.
	NOTIKEWIN	2	10/5	2	-	2	1000	2	
HERCULES	VIKING	19	15/5	15	-	15	1050	16	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLAIRMORE	29	10/5	25	-	25	960	24	
HESPERO	BASAL BLAIRMORE	7	25/10	5	-	5	1130	6	
	JURASSIC	2	10/10	2	-	2	1130	2	
	LEDUC ASSOCIATED	6	10/20	4	-	4	1150	5	
HOLBORNE	CARDIUM	6	25/5	4	-	4	980	4	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLAIRMORE	25	20/10	18	-	18	1120	20	
HOLMBERG	BLAIRMORE	25	15/5	20	-	20	1050	21	GAS SOLD TO BAROID OF CANADA, LTD. PLANT.
HOMEGLEN-RIMBEY	LEDUC ASSOCIATED AND SOLUTION	1000	10/15	800	78	722	1080	780	GAS SOLD TO TRANS-CANADA PIPES LINES LIMITED AND ALBERTA AND SOUTHERN GAS CO. LTD.

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FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1963 BCF	REMAINING MARKETABLE GAS TO DEC. 31, 1963 BCF	ESTIMATED HEATING VALUE BTU PER CU. FT.	REMAINING MARKETABLE GAS AT 1000 BTU PER CU.FT. BCF	REMARKS
HUNTER VALLEY	MISSISSIPPIAN	140	10/20	100	-	100	1080	108	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
HUSSAR	BELLY RIVER	3	30/5	2	-	2	1000	2	
	VIKING	56	25/5	40	1	39	1040	41	GAS SOLD TO TRANS-CANADA PIPE LINES LIMITED.
	BASAL COLORADO	130	20/5	100	23	77	1040*	80	
	BLAIRMORE	480	10/5	410	42	368	1040*	383	
INLAND	VIKING	21	25/5	15	-	15	980	15	
INNISFAIL	MISSISSIPPIAN	22	10/10	18	-	18	1080	19	
	WABAMUN	4	15/15	3	-	3	1170	4	
	LEDUC ASSOCIATED	17	10/35	10	-	10	1020	10	
	LEDUC SOLUTION	210	40/40	75	13	62	1110*	69	GAS SOLD TO TRANS-CANADA PIPE LINES LIMITED.
JARVIE	VIKING	9	20/5	7	-	7	1040	7	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLAIRMORE	7	10/5	6	-	6	1100	7	
JENNER	BOW ISLAND	4	25/5	3	-	3	990	3	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BASAL COLORADO	4	10/5	3	-	3	1040	3	
	BLAIRMORE	11	15/5	9	-	9	1050	9	
JOARCAM	VIKING ASSOCIATED	66	20/5	50	-	50	1040	52	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
JOFFRE	VIKING	1	25/5	1	-	1	1000	1	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BASAL BLAIRMORE	26	20/5	20	-	20	1020	20	
	NISKU SOLUTION	100	40/40	36	-	36	1260	45	
JUDY CREEK	VIKING	13	20/5	10	-	10	1020	10	
	BEAVERHILL LAKE SOLUTION	770	60/35	200	1	199	1080	215	GAS SOLD TO NORTH-WESTERN UTILITIES, LIMITED.
JUMPING POUND	MISSISSIPPIAN	820	15/17	580	176	404	1050	424	GAS SOLD TO CANADIAN WESTERN NATURAL GAS COMPANY LIMITED.
JUMPING POUND WEST	MISSISSIPPIAN	150	15/20	100	-	100	1050	105	
KAYBOB	NOTIKEWIN	300	15/5	240	17	223	1020	227	GAS SOLD TO ALBERTA AND SOUTHERN GAS CO. LTD.
	GETHING	12	10/5	10	-	10	1050	11	
	CADOMIN	99	15/5	80	-	80	1040	83	
	WINTERBURN	5	15/35	3	-	3	1070	3	

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FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1963 BCF	REMAINING MARKETABLE GAS TO DEC. 31, 1963 BCF	ESTIMATED HEATING VALUE BTU PER CU. FT.	REMAINING MARKETABLE GAS AT 1000 BTU PER CU.FT. BCF	REMARKS
KAYBOB (CONT)	BEAVERHILL LAKE ASSOCIATED	4	20/15	3	-	3	1070	3	
	BEAVERHILL LAKE SOLUTION	330	60/25	100	1	99	1140	113	GAS SOLD TO ALBERTA AND SOUTHERN GAS CO. LTD.
KAYBOB SOUTH	VIKING	20	20/5	15	-	15	1100	17	
	CADOMIN	37	15/5	30	-	30	1040	31	
	TRIASSIC	4	20/5	3	-	3	1160	3	
	TRIASSIC SOLUTION	210	50/25	80	-	80	1160	93	
	NISKU	1	20/5	1	-	1	1240	1	
	BEAVERHILL LAKE	24	10/30	15	-	15	1210	18	
KESSLER	VIKING	70	25/5	50	2	48	990	48	GAS SOLD TO TRANS-CANADA PIPE LINES LIMITED.
	MANNVILLE	5	10/5	4	-	4	990	4	
KILLAM	VIKING	4	25/5	3	-	3	1040	3	PRESENTLY CONSIDERED
	BLAIRMORE	9	15/5	7	-	7	1000	7	BEYOND ECONOMIC REACH.
KIRKCALDY	BASAL MANNVILLE	20	20/5	15	-	15	1000	15	
	MISSISSIPPIAN	39	15/10	30	-	30	1010	30	
KNELLER	BLAIRMORE	12	10/5	10	-	10	1100	11	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
LAC LA BICHE	VIKING	14	25/5	10	-	10	1010	10	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLAIRMORE	20	20/5	15	-	15	1010	15	SUPPLIES LOCAL UTILITY.
LAMBERT CREEK	WABAMUN	15	25/10	10	-	10	1050	11	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
LEAHURST	BLAIRMORE	9	10/5	8	1	7	1100	8	SUPPLIES LOCAL UTILITY.
LEDUC-WOODBEND	VIKING	20	20/5	15	2	13	1070	14	INJECTED INTO
	BASAL BLAIRMORE	85	20/5	65	12	53	1180	63	NISKU AND LEDUC GAS CAPS.
	NISKU ASSOCIATED	37	10/15	28	-11	39	1180	46	
	NISKU SOLUTION	140	25/30	72	61	11	1180	13	GAS SOLD TO NORTH-
	LEDUC ASSOCIATED	420	15/15	300	-13	313	1180	369	WESTERN UTILITIES,
	LEDUC SOLUTION	230	50/30	80	60	20	1180	24	LIMITED.

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LINDBERGH	VIKING	3	35/5	2	-	2	990	2	
	BLAIRMORE	18	20/5	14	4	10	1100	11	SUPPLIES SALT PLANT.
LLOYDMINSTER	BLAIRMORE	40	50/30	14	11	3	950	3	SUPPLIES LOCAL UTILITY.
LONE PINE CREEK	BASAL BLAIRMORE	4	10/10	3	-	3	1020	3	
	WABAMUN	160	20/20	100	-	100	1030	103	
LOOKOUT BUTTE	MISSISSIPPIAN	550	15/15	400	1	399	1040	415	RESERVOIR BEING CYCLED.
LOVETT RIVER	BLAIRMORE	12	10/5	10	-	10	1040	10	PRESENTLY CONSIDERED
	MISSISSIPPIAN	86	10/10	70	-	70	1040	73	BEYOND ECONOMIC REACH.
MAJEAU LAKE	BLAIRMORE	3	20/5	2	-	2	1000	2	PRESENTLY CONSIDERED
	MISSISSIPPIAN	12	10/10	10	-	10	1070	11	BEYOND ECONOMIC REACH.
MANYBERRIES	BOW ISLAND	42	20/5	32	16	16	940	15	GAS SOLD TO CANADIAN-MONTANA GAS COMPANY LTD.
MARTEN HILLS	PELICAN	2	40/5	1	-	1	990	1	PRESENTLY CONSIDERED
	WABISKAW	56	25/5	40	-	40	990	40	BEYOND ECONOMIC
	WABAMUN	140	25/5	100	-	100	1000	100	REACH.
MAZEPPA	MISSISSIPPIAN	20	10/15	15	-	15	1060	16	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
MEDICINE HAT	MEDICINE HAT	2300	20/5	1750	310	1440	950*	1368	GAS SOLD TO TRANS-CANADA PIPE LINES LIMITED, MANY ISLANDS PIPE LINES LIMITED AND LOCAL SUPPLY.
	BOW ISLAND	20	20/5	15	-	15	970	15	
	ELLIS	25	15/5	20	-	20	1000	20	
MEDICINE RIVER	BLAIRMORE	39	15/10	30	-	30	1150	35	
	JURASSIC	8	15/10	6	-	6	1020	6	
	JURASSIC ASSOCIATED	8	15/10	6	-	6	1020	6	
	MISSISSIPPIAN ASSOCIATED	5	10/10	4	-	4	1100	4	
MILLET	BLAIRMORE	21	20/10	15	-	15	1020	15	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
MINNEHIK-BUCK LAKE	BLAIRMORE	6	25/5	4	-	4	1000	4	GAS SOLD TO ABLERTA AND SOUTHERN GAS CO. LTD.
	MISSISSIPPIAN	650	10/15	500	24	476	1090	519	

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Moose Mountain	Mississippian	67	10/25	45	-	45	1000	45	Presently considered beyond economic reach.
Morinville	Viking	3	25/5	2	-	2	1000	2	
	Blairmore	140	15/5	110	35	75	1070	80	Gas sold to Canadian Industrial Gas Limited and local supply.
Morleyville	Mississippian	69	10/20	50	-	50	1050	53	
Mountain Park	Triassic	29	10/5	25	-	25	1090	27	Presently considered beyond economic reach.
Nevis	Blairmore	65	15/10	50	-	50	1000	50	
	Devonian	740	10/20	530	63	467	990*	462	Gas sold to Trans-Canada Pipe Lines Limited.
Nordegg	Triassic	9	10/10	7	-	7	1000	7	Presently considered beyond economic reach.
	Mississippian	25	10/10	20	-	20	1000	20	
Normandville	Gething	15	15/5	12	-	12	980	12	
	Triassic	4	15/5	3	-	3	1090	3	
	Mississippian	31	15/5	25	1	24	1050	25	Supplies local utility.
Obed	Mississippian	12	10/10	10	-	10	1040	10	Presently considered beyond economic reach.
Oberlin	Blairmore	3	20/5	2	1	1	1090	1	Supplies local utility.
Okotoks	Wabamun	420	10/60	150	18	132	1000	132	Gas sold to Canadian Western Natural Gas Company Limited.
Olds	Wabamun	280	10/20	200	-	200	1050	210	
Oyen	Viking	43	15/5	35	3	32	960*	31	Gas sold to Trans-Canada Pipe Lines Limited.
	Detrital	4	15/5	3	-	3	1140	3	
Paddle River	Jurassic	190	25/10	130	-	130	1070	139	
	Mississippian	30	25/10	20	-	20	1060	21	

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PAKOWKI LAKE	BOW ISLAND	14	25/5	10	3	7	940	7	GAS SOLD TO CANADIAN-MONTANA GAS COMPANY LTD.
PARKLAND NORTH-EAST	MISSISSIPPIAN	21	15/15	15	-	15	1010	15	
PEMBINA	BELLY RIVER	94	10/5	80	-	80	1180	94	
	BELLY RIVER SOLUTION	48	40/65	10	1	9	1180	11	GAS SOLD TO NORTH-WESTERN UTILITIES, LIMITED.
	CARDIUM SOLUTION	3100	60/35	800	150	650	1170	761	
	VIKING	11	10/5	9	-	9	1100	10	
	BLAIRMORE	210	10/10	170	7	163	1120	183	GAS SOLD TO ALBERTA AND SOUTHERN GAS CO. LTD.
	NORDEGG	18	10/5	15	-	15	1050	16	
	MISSISSIPPIAN	13	10/15	10	-	10	1050	11	
PENDANT D'OREILLE	BOW ISLAND	180	20/5	140	71	69	940	65	GAS SOLD TO CANADIAN-MONTANA GAS COMPANY LTD.
	MANNVILLE	25	15/5	20	5	15	1000	15	
PENHOLD	VIKING	14	10/5	12	-	12	1020	12	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
PHIL CAN	GETHING	12	20/5	9	-	9	980	9	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	MISSISSIPPIAN	5	15/5	4	-	4	1050	4	
PINCHER CREEK	MISSISSIPPIAN	1800	25/25	1000	190	810	1030*	834	GAS SOLD TO TRANS-CANADA PIPE LINES LIMITED.
PINE CREEK	WABAMUN	100	10/50	45	-	45	1050*	47	
	LEDUC	1100	25/40	500	36	464	1050*	487	GAS USED TO PRESSURE MAINTAIN WINDFALL FIELD.
PLAIN LAKE	VIKING	3	25/5	2	-	2	980	2	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLAIRMORE	28	20/5	21	-	21	1000	21	
POUCE COUPE	PEACE RIVER	140	15/5	110	57	53	1000	53	GAS SOLD TO WESTCOAST TRANSMISSION COMPANY LIMITED.
	CADOMIN	12	15/5	10	-	10	1060	11	
POUCE COUPE SOUTH	PEACE RIVER	110	15/5	90	38	52	1040	54	GAS SOLD TO WESTCOAST TRANSMISSION COMPANY LIMITED AND PEACE RIVER NATURAL GAS CO. LTD.
	GETHING	14	10/5	12	8	4	1000	4	
	JURASSIC	1	25/10	1	-	1	1070	1	
	TRIASSIC	25	15/5	20	-	20	1090	22	

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Prevo	Mississippian	37	10/10	30	3	27	1100	30	Gas sold to Trans-Canada Pipe Lines Limited.
Princess	Second Specks	28	25/5	20	-	20	1000	20	
	Bow Island	7	20/5	5	-	5	1010	5	
	Basal Colorado	39	20/5	30	1	29	1010*	29	Gas sold to Trans-Canada Pipe Lines Limited.
	Basal Blairmore	160	15/5	130	14	116	1010*	117	
	Mississippian	8	20/5	6	-	6	1030	6	
	Jefferson	44	20/15	30	-	30	1030	31	
Provost	Viking	710	20/5	540	100	440	1000*	440	Gas sold to Trans-Canada Pipe Lines Limited.
	Blairmore	19	15/5	15	-	15	1000	15	
Raven River	Viking	19	25/10	13	-	13	1020	13	
	Basal Blairmore	4	15/10	3	-	3	1050	3	
	Mississippian	26	10/15	20	-	20	1070	21	
Redland	Viking	3	20/5	2	-	2	1000	2	
	Blairmore	20	20/5	15	-	15	1050	16	
Redwater	Viking	14	25/5	10	-	10	1040	10	
	Leduc Solution	220	40/65	46	15	31	1220	38	Gas sold to Mid-Western Industrial Gas Ltd.
Red Willow	Viking	13	20/5	10	-	10	1020	10	Presently considered beyond economic reach.
	Basal Blairmore	8	20/10	6	-	6	1100	7	
Retlaw	Bow Island	3	25/5	2	-	2	950	2	
	Basal Colorado	3	25/5	2	-	2	1020	2	
	Basal Blairmore	56	20/10	40	-	40	1000	40	
Rich	Basal Blairmore	16	15/10	12	-	12	1100	13	
Richdale	Viking	14	25/5	10	-	10	1010	10	Presently considered beyond economic reach.
	Basal Blairmore	11	25/5	8	-	8	1050	8	
Rochester	Viking	5	20/5	4	-	4	1000	4	Presently considered beyond economic reach.
	Blairmore	27	25/5	19	-	19	1000	19	
	Wabamun	6	10/5	5	-	5	1070	5	
Rolling Hills	Bow Island	31	15/5	25	-	25	970	24	Presently considered beyond economic reach.
	Basal Colorado	12	15/5	10	-	10	1030	10	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1963 BCF	REMAINING MARKETABLE GAS TO DEC. 31, 1963 BCF	ESTIMATED HEATING VALUE BTU PER CU. FT.	REMAINING MARKETABLE GAS AT 1000 BTU PER CU.FT. BCF	REMARKS
Rowley	Viking	29	10/5	25	-	25	1040	26	Presently considered beyond economic reach.
	Mannville	9	10/5	8	-	8	1050	8	
	Mississippian Associated	49	10/10	40	-	40	1080	43	
Rycroft	Gething	16	15/5	13	3	10	1040	10	Supplies local utility.
St. Albert-Big Lake	Viking	3	20/5	2	-	2	1070*	2	
	Blairmore	150	15/5	120	46	74	1070*	79	Gas sold to Canadian Industrial Gas Limited.
St. Brides	Blairmore	26	20/5	20	-	20	940	19	Presently considered beyond economic reach.
St. Paul	Blairmore	5	20/5	4	3	1	1010	1	Supplies local utility.
Saddle Hills	Peace River	41	10/5	35	-	35	1020	36	
	Gething	4	15/5	3	-	3	980	3	
	Permo-Penn	23	10/5	20	-	20	1030	21	
Samson	Basal Blairmore Associated and Non-Associated	19	20/10	14	4	10	1040	10	Gas sold to North-western Utilities, Limited.
Sarcee	Mississippian	180	10/20	130	9	121	1050	127	Gas sold to Canadian Western Natural Gas Company Limited.
Savanna Creek	Mississippian	590	10/25	400	12	388	1020	396	Gas sold to West-coast Transmission Company Limited.
Sedalia	Viking	130	20/5	100	2	98	1010*	99	Gas sold to Trans-Canada Pipe Lines Limited.
	Blairmore	1	25/5	1	-	1	1010	1	
Sibbald	Viking	59	20/5	45	6	39	960*	37	Gas sold to Trans-Canada Pipe Lines Limited.
	Basal Colorado	13	20/5	10	-	10	970	10	
Sieu River	Blairmore	12	15/5	10	-	10	1000	10	Presently considered beyond economic reach.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1963 BCF	REMAINING MARKETABLE GAS TO DEC. 31, 1963 BCF	ESTIMATED HEATING VALUE BTU PER CU. FT.	REMAINING MARKETABLE GAS AT 1000 BTU PER CU.FT. BCF	REMARKS
SIMONETTE	CADOMIN	20	15/10	15	-	15	1060	16	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	WABAMUN	140	10/35	80	-	80	1070	86	
	LEDUC SOLUTION	200	50/50	50	-	50	1020	51	
SMITH COULEE	BOW ISLAND	49	25/5	35	14	21	930	20	GAS SOLD TO CANADIAN-MONTANA GAS COMPANY LTD.
STANDARD	VIKING	26	20/5	20	-	20	1000	20	
STEEN RIVER	SLAVE POINT	13	10/15	10	-	10	1070	11	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
STEEP CREEK	GETHING	6	15/5	5	-	5	1020	5	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	TRIASSIC	7	15/10	5	-	5	1030	5	
	PERMO-PENN	12	10/10	10	-	10	1030	10	
STETTLER	VIKING	4	25/5	3	-	3	1020	3	GAS USED FOR COMPRESSOR FUEL.
	NISKU SOLUTION	26	45/45	8	2	6	1130	7	GAS SOLD TO TRANS-CANADA PIPE LINES LIMITED AND NORTH-WESTERN UTILITIES, LIMITED.
	LEDUC SOLUTION	10	45/45	3	1	2	1140	2	
STOLBERG	MISSISSIPPIAN	86	10/10	70	-	70	1040	73	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
STRATHMORE	BELLY RIVER	7	20/5	5	-	5	1000	5	
	VIKING	7	20/5	5	-	5	1000	5	
STURGEON LAKE SOUTH	GETHING	16	15/5	13	-	13	1000	13	
	CADOMIN	11	15/5	9	-	9	1060	10	
	TRIASSIC ASSOCIATED	5	10/5	4	-	4	1180	5	
	TRIASSIC SOLUTION	20	35/70	4	-	4	1180	5	
	WABAMUN	7	10/25	5	-	5	1070	5	
	LEDUC ASSOCIATED	7	10/25	5	-	5	1080	5	
	LEDUC SOLUTION	230	45/45	70	7	63	1080	68	GAS SOLD TO CANADIAN UTILITIES LIMITED.
STURGEON LAKE SOUTH GENERAL AREA	GETHING	80	15/5	65	-	65	1000	65	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	CADOMIN	31	15/5	25	-	25	1060	27	
	TRIASSIC	6	15/5	5	-	5	1180	6	
	PERMO-PENN	3	20/5	2	-	2	1030	2	
SUFFIELD	MILK RIVER	32	25/5	23	4	19	960	18	SUPPLIES LOCAL UTILITY.
	SECOND SPECKS	2	15/5	2	-	2	980	2	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1963 BCF	REMAINING MARKETABLE GAS TO DEC. 31, 1963 BCF	ESTIMATED HEATING VALUE BTU PER CU. FT.	REMAINING MARKETABLE GAS AT 1000 BTU PER CU.FT. BCF	REMARKS
SUNDRE	VIKING	35	20/10	25	-	25	1020	26	
	BASAL BLAIRMORE	33	15/10	25	-	25	1020	26	
	MISSISSIPPIAN	15	20/15	10	-	10	1070	11	
	MISSISSIPPIAN ASSOCIATED	20	10/15	15	-2	17	1070	18	
	MISSISSIPPIAN SOLUTION	63	40/20	30	7	23	1100	25	GAS INJECTED INTO GAS CAP.
SWALWELL	MISSISSIPPIAN	12	10/10	10	-	10	1100	11	
SWAN HILLS	GETHING	1	10/5	1	-	1	1050	1	
	BEAVERHILL LAKE SOLUTION	1400	55/40	380	1	379	1120	424	GAS SOLD TO NORTH-WESTERN UTILITIES, LIMITED.
SYLVAN LAKE	EDMONTON	2	15/5	2	-	2	1000	2	
	BLAIRMORE	250	10/10	200	-	200	1100	220	
	DETRITAL	2	10/5	2	-	2	1100	2	
	JURASSIC ASSOCIATED AND NON-ASSOCIATED	39	15/10	30	-	30	1020	31	
	MISSISSIPPIAN	52	15/10	40	-	40	1100	44	
	LEDUC ASSOCIATED	25	10/10	20	-	20	1020	20	
TANGENT	CADOTTE	15	30/5	10	-	10	1010	10	
	GETHING	140	15/5	110	-	110	1000	110	
	TRIASSIC	66	20/5	50	-	50	1180	59	
THREE HILLS CREEK	BELLY RIVER	9	15/5	7	-	7	970	7	
	VIKING	8	20/5	6	-	6	1000	6	
	MISSISSIPPIAN	210	10/10	170	5	165	1100*	182	GAS SOLD TO TRANS-CANADA PIPE LINES LIMITED.
	LEDUC	10	20/15	7	-	7	1100	8	
TURIN	BOW ISLAND	11	20/5	8	-	8	970	8	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BASAL BLAIRMORE	21	10/5	18	-	18	1020	18	
	ELLIS	5	15/5	4	-	4	1070	4	
	MISSISSIPPIAN	3	15/10	2	-	2	1050	2	
TURNER VALLEY	MISSISSIPPIAN ASSOCIATED	1500	10/70	410	270	140	1110	155	GAS SOLD TO CANADIAN WESTERN NATURAL GAS COMPANY LIMITED AND LOCAL UTILITY.
	MISSISSIPPIAN SOLUTION	1400	45/55	350	280	70	1110	78	
TWINING	BASAL MANNVILLE	1	20/5	1	-	1	1120	1	
	MISSISSIPPIAN	26	20/5	20	-	20	1100	22	

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FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1963 BCF	REMAINING MARKETABLE GAS TO DEC. 31, 1963 BCF	ESTIMATED HEATING VALUE BTU PER CU. FT.	REMAINING MARKETABLE GAS AT 1000 BTU PER CU.FT. BCF	REMARKS
TWINING (CONT)	MISSIPPIAN SOLUTION	15	40/35	6	-	6	1100	7	
TWINING NORTH	MANNVILLE	7	20/5	5	-	5	1100	6	
	MISSISSIPPIAN ASSOCIATED	40	20/5	30	-	30	1110	33	
	MISSISSIPPIAN SOLUTION	16	40/15	8	-	8	1110	9	
TWO CREEK	TRIASSIC	12	10/5	10	-	10	1090	11	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
USONA	BLAIRMORE	12	10/5	10	-	10	1110	11	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
VERGER	BOW ISLAND	1	25/5	1	-	1	1100	1	
	BASAL COLORADO	3	25/5	2	-	2	1060	2	
	BASAL MANNVILLE	50	20/5	38	-	38	1050	40	
	MISSISSIPPIAN	3	15/10	2	-	2	1070	2	
VIKING-KINSELLA	VIKING	1100	25/5	770	350	420	990	416	GAS SOLD TO NORTH-WESTERN UTILITIES, LIMITED.
	BLAIRMORE	29	20/5	22	9	13	1000	13	SUPPLIES LOCAL UTILITY.
	DEVONIAN	11	20/5	8	2	6	1010	6	GAS SOLD TO NORTH-WESTERN UTILITIES, LIMITED.
VIRGINIA HILLS	BLAIRMORE	9	10/5	8	-	8	1040	8	
	TRIASSIC	20	15/10	15	-	15	1160	17	
	BEAVERHILL LAKE SOLTUION	220	55/55	45	-	45	1120	50	
	SLAVE POINT	3	25/20	2	-	2	1070	2	
WAINWRIGHT	VIKING	5	15/5	4	-	4	980	4	
	BLAIRMORE ASSOCIATED AND NON-ASSOCIATED	33	20/5	25	7	18	940	17	PRODUCED WITH OIL.
WAIPOROUS CREEK	MISSISSIPPIAN	69	10/20	50	-	50	1070	54	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
WASKAHIGAN	DUNVEGAN	25	10/10	20	-	20	1100	22	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.

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WATERGLEN	BLAIRMORE	7	15/10	5	-	5	1100	6	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	LEDUC	10	10/20	7	-	7	1100	8	
WATERTON	MISSISSIPPIAN	1600	15/50	700	27	673	1020	686	GAS SOLD TO ALBERTA AND SOUTHERN GAS CO. LTD.
	DEVONIAN	280	10/20	200	3	197	1020	201	
WATTS	VIKING	3	20/5	2	1	1	1040	1	SUPPLIES LOCAL UTILITY.
	MISSISSIPPIAN	1	20/5	1	-	1	1070	1	
WAYNE-ROSEDALE	BELLY RIVER	7	20/5	5	-	5	1000	5	
	VIKING	180	20/5	140	7	133	1100*	146	GAS SOLD TO TRANS-CANADA PIPE LINES LIMITED AND SUPPLIES LOCAL UTILITY.
	BLAIRMORE	220	15/5	180	8	172	1100*	189	
WEST DRUMHELLER	BASAL BLAIRMORE	12	15/5	10	-	10	1100	11	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	NISKU ASSOCIATED	9	10/15	7	-	7	1090	8	
WESTEROSE	BLAIRMORE	7	20/5	5	-	5	1020	5	
	LEDUC ASSOCIATED	130	10/20	90	-7	97	1070	104	
	LEDUC SOLUTION	130	30/20	73	10	63	1100	69	GAS INJECTED INTO GAS CAP.
WESTEROSE SOUTH	WABAMUN	7	10/10	6	-	6	1090	7	
	LEDUC	1700	10/15	1300	120	1180	1090	1286	GAS SOLD TO ALBERTA AND SOUTHERN GAS CO. LTD. AND TRANS-CANADA PIPE LINES LIMITED.
WESTLOCK	VIKING	310	15/5	250	5	245	1040	255	GAS SOLD TO CANADIAN INDUSTRIAL GAS LIMITED AND SUPPLIES LOCAL UTILITY.
	BASAL BLAIRMORE	4	20/5	3	-	3	1100	3	
WEST PRAIRIE	CADOTTE	18	10/5	15	-	15	1040	16	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLUESKY	6	10/5	5	-	5	990	5	
WESTWARD HO	VIKING	11	20/10	8	-	8	1020	8	
	BLAIRMORE	4	20/10	3	-	3	1020	3	
	MISSISSIPPIAN SOLUTION	28	35/45	10	-	10	1130	11	
WHITELAW	GETHING	31	15/5	25	4	21	1020	21	SUPPLIES LOCAL UTILITY.
	TRIASSIC	33	20/5	25	-	25	1090	27	

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WILDCAT HILLS	MISSISSIPPIAN	830	10/20	600	26	574	1080	620	GAS SOLD TO ALBERTA AND SOUTHERN GAS CO. LTD.
WILDHORSE CREEK	MISSISSIPPIAN	130	10/15	100	-	100	940	94	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
WILDMERE	BLAIRMORE	22	20/5	17	8	9	960	9	SUPPLIES LOCAL UTILITY.
WILDUNN CREEK	VIKING	35	25/5	25	-	25	1010	25	
WILLESDEN GREEN	BELLY RIVER	4	20/5	3	-	3	1000	3	
	CARDIUM	12	20/5	9	-	9	1100	10	
	CARDIUM SOLUTION	270	77/35	40	-	40	1100	44	
	BASAL BLAIRMORE	20	10/15	15	-	15	1100	17	
WILLINGDON	VIKING	3	25/5	2	-	2	980	2	
	MANNVILLE	15	25/5	11	1	10	990	10	GAS SOLD TO WESTERN
	LEDUC	11	10/5	9	4	5	990	5	MINERALS LTD. PLANT.
WIMBORNE	VIKING	1	25/5	1	-	1	1020	1	
	MISSISSIPPIAN	1	10/10	1	-	1	1100	1	
	NISKU	3	20/15	2	-	2	1160	2	
	NISKU SOLUTION	5	30/45	2	-	2	1160	2	
	LEDUC ASSOCIATED	320	10/30	200	2	198	1000	198	PRODUCED WITH OIL.
	LECUC SOLUTION	91	50/45	25	-	25	1000	25	
WINDFALL	VIKING	13	25/5	9	-	9	1030	9	
	MISSISSIPPIAN	5	15/5	4	-	4	1040	4	
	LEDUC	820	10/35	480	-	480	1050*	504	RESERVOIR BEING CYCLED. GAS SOLD TO ALBERTA AND SOUTHERN GAS CO. LTD. RESERVOIR
WIZARD LAKE	VIKING	1	15/5	1	-	1	1070	1	
	BLAIRMORE	18	20/15	12	8	4	1120	4	GAS SOLD TO NORTH-
	LEDUC SOLUTION	220	40/25	100	15	85	1250	106	WESTERN UTILITIES, LIMITED.
WOKING	PEACE RIVER	5	10/5	4	-	4	1040	4	
	SPIRIT RIVER	3	20/5	2	-	2	1040	2	PRESENTLY CONSIDERED
	BLUESKY	4	20/5	3	-	3	1040	3	BEYOND ECONOMIC
	PERMO-PENN	3	20/5	2	-	2	1060	2	REACH.
	MISSISSIPPIAN	3	25/5	2	-	2	1070	2	

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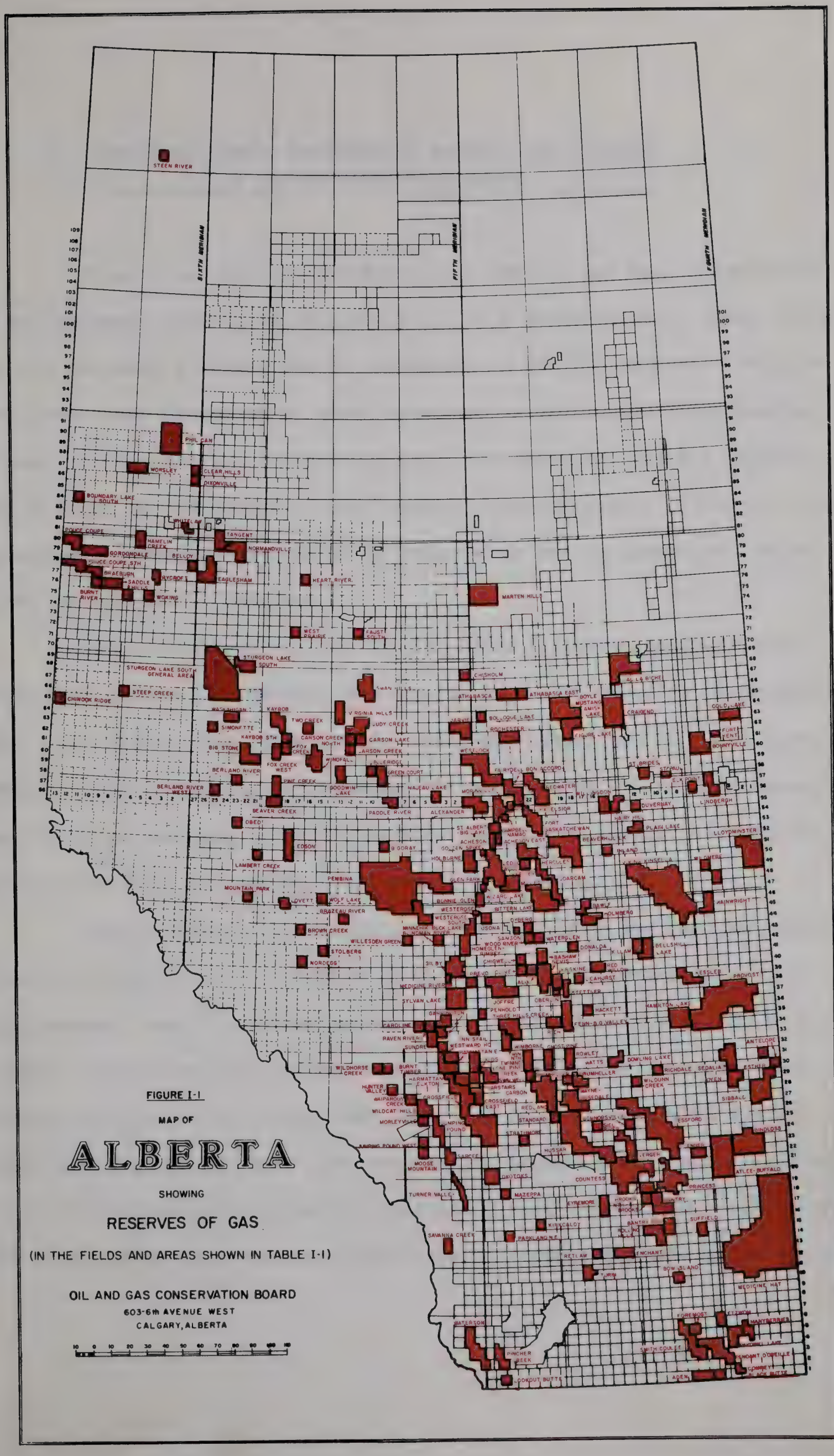
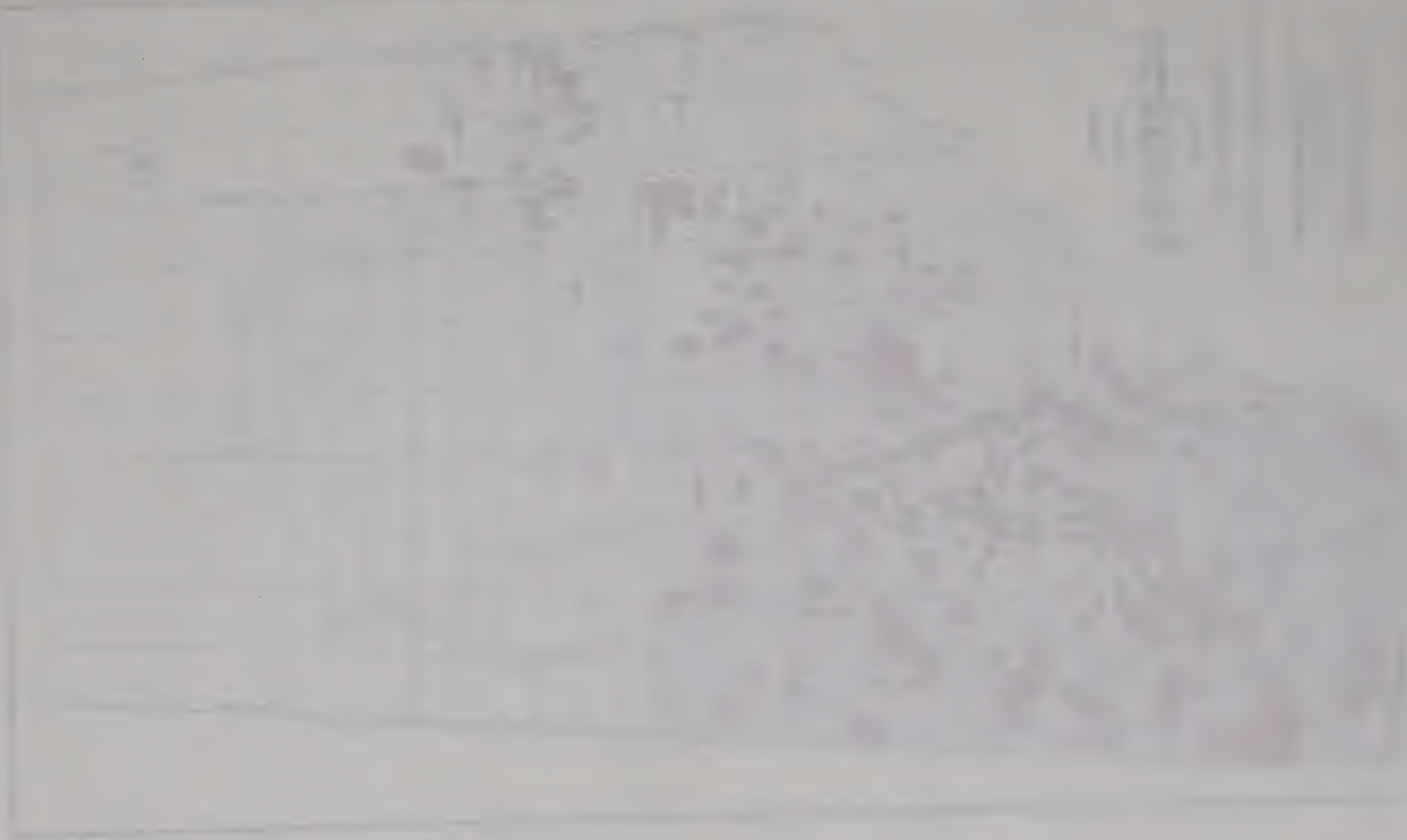
Wolf Lake	Cadomin	13	10/5	11	-	11	1060	12	Presently considered beyond economic reach.
Wood River	Basal Blairmore	37	10/10	30	2	28	1090*	31	Gas sold to Trans-Canada Pipe Lines Limited.
Worsley	Leduc	270	15/5	220	15	205	1070	219	Gas sold to West-coast Transmission Company Limited and supplies local utility.
Within Economic Reach				33,043		29,217		30,914	
Beyond Economic Reach				2,732		2,732		2,823	
Other Reserves	(Within Economic Reach)			43		43		45	
Less Than 10 Bcf	(Beyond Economic Reach)			909		909		954	
TOTAL RESERVES, DECEMBER 31, 1963.				36,727	3,826	32,901		34,736	

* Measured higher heating value.


STEEN RIVER
SIXTH MERIDIAN
FIFTH MERIDIAN
FOURTH MERIDIAN
PHIL CAN
WORSLEY
CLEAR HILLS
DIXONVILLE
BOUNDARY LAKE SOUTH
RHUTELAW
POUCE COUPE
HAMELIN CREEK
TANGENT
NORMANDVILLE
GORDONDALE
BELLOY
POUCE COUPE STH
BRAEBURN
RYCROFT
EAGLESHAM
SADDLE HILLS
HEART RIVER
BURNT RIVER
WOKING
WARTEN HILLS
WEST PRAIRIE
FAUST SOUTH
STURGEON LAKE SOUTH
STURGEON LAKE SOUTH GENERAL AREA
STEEP CREEK
CHINOOK RIDGE
SWAN HILLS
CHISHOLM
ATHABASCA
ATHABASCA EAST
BOYLE
MUSTANG
MISIK LAKE
ALL LA BICHE
COLD LAKE
CRAIGEND
WASKAHIGAN
KAYBOB
TWO CREEK
VIRGINIA HILLS
JUDY CREEK
MARVEL
BOLLOQUE LAKE
ROCHESTER
FIGURE LAKE
FORT KENT
BONNYVILLE
SIMONETTE
KAYBOB STH
CARSON CREEK NORTH
CARSON LAKE
BIG STONE
FOX CREEK
LARSON CREEK
WESTLOCK
ST BRIDES
STPAUL
BERLAND RIVER
FOX CREEK WEST
WINDFALL
BLUERIDGE
GREEN COURT
FARRELL
BON ACCORD
PINE CREEK
GOODWIN LAKE
MAJEAU LAKE
MORINVILLE
REDWATER
LYDON
DUVERNAY
LINDBERGH
BERLAND RIVER WEST
BEAVER CREEK
PADDLE RIVER
ALEXANDER
ELSIOR
HARY HILL
PLAIN LAKE
LLOYDMINSTER
OBED
ST ALBERT-BIG LAKE
FORT SASKATCHEWAN
BEAVERHILL LK
EDSON
B GORAY
ACHESON
ACHESON EAST
GOLDEN SPIKE
INLAND
HOLBURNE
HERCULES
WILDMERE
LAMBERT CREEK
PEMBINA
GLEN PARK
CARCAM
MOUNTAIN PARK
LOVETT
WOLF LAKE
BONNIE GLEN
WESTEROSE
BITTERN LAKE
WAINWRIGHT
BRAZEAU RIVER
WESTEROSE SOUTH
HOLMBERG
BROWN CREEK
MINNEHIK BUCK LAKE
BINGMAN RIVER
OSONA
OYBERG
WILLESDEN GREEN
SAMSON
WOOD RIVER
WATERGLEN
STOLBERG
HOMEGLEN-RIMBEY
DONALDA
BELLSHILL LAKE
NORDEGG
CHIGWELL
BASHAW
LEWIS
SILBY
RED WILLOW
PREVOST
MEDICINE RIVER
LEAMURST
SYLVAN LAKE
JOFFRE
OBERLIN
HACKETT
HAMILTON LAKE
PENHOLD
THREE HILLS CREEK
CAROLINE
FENN-BIG VALLEY
RAVEN RIVER
NN SPAIL
WESTWARD HO
SUNDRE
WINBORNE
GHOSTPINE
ROWLEY
ANTELOPE
WATTS
DOWLING LAKE
WILDMERE CREEK
RUMHELLER
RICHDALE
SEDALIA
ESTHER
WILDHORSE CREEK
BURNT TIMBER
HARMATTAN-ELKTON
HUNTER VALLEY
ARSTAIRS
CARBON
WAYNE-ROSEDALE
SIBBALD
CROSSFIELD
CROSSFIELD EAST
WILDCAT HILL
RED DEER
MORLEYVILLE
STANDARD
ESSFORD
STRATHMORE
BINDLOSS
HUSSAR
SARCEE
MOOSE MOUNTAIN
OKOTOKS
ATLEE-BUFFALO
COUNTESS
TURNER VALLEY
MAZERPPA
PRINCESS
EYREMORE
SUFFIELD
KIRKCALDY
SAVANNA CREEK
PARKLAND N.E.
RETLAW
ENCHANT
BOW ISLAND
MEDICINE HAT
WATERTON
FOREMOST
PINCHER CREEK
SMITH COULEE
LOOKOUT BUTTE
FIGURE I-1
MAP OF
ALBERTA
SHOWING
RESERVES OF GAS
(IN THE FIELDS AND AREAS SHOWN IN TABLE I-1)
OIL AND GAS CONSERVATION BOARD
603-6th AVENUE WEST
CALGARY, ALBERTA



II. THE ESTABLISHED RESERVES OF NATURAL GAS LIQUIDS IN THE PROVINCE OF ALBERTA

Natural gas liquids are defined in The Oil and Gas Conservation Act as "propane, butanes or pentanes plus, or a combination of them, obtained from the processing of raw gas or condensate." For the purpose of this report, condensate recovered in stock tanks and marketed without processing is included in the reserves of pentanes plus, and hence natural gas liquids. Also included in the pentanes plus category, are high vapor pressure products containing substantial quantities of butanes, as are recovered at several plants throughout the Province.

In its last reserve report, the Board estimated the recoverable established reserves of natural gas liquids in the Province as of December 31, 1962, to be 852 million barrels. The Board now estimates the established reserves of these liquids as of December 31, 1963, to be 905 million barrels. These reserves are made up of 253 million barrels of propane, 160 million barrels of butanes and 492 million barrels of pentanes plus.

The 53 million barrel increase in reserves in the past 12 months is made up entirely of an increase in the reserves of pentanes plus. Of this increase, some 20 million barrels are attributable to a growth in gas reserves, some 30 million barrels result from a projected increase in recoveries for certain pools, and the remainder is associated with the reprocessing of pipe line gas. The reserves of propane and butanes, recoverable from field processing plants, declined during the year as a result of additional information obtained with respect to certain pools. This decline

was offset by an increase in the reserves expected to be recovered through the reprocessing of pipe line gas.

Details of the Board's current estimate of the established reserves of natural gas liquids are presented in Table II-1. The table does not show individual fields having reserves of less than five million barrels, however, the sum of these reserves is included under "Other Reserves" and in the Provincial total. The table has been prepared by applying the average liquid recovery ratio over the remaining life of the pool to the remaining established marketable reserves of gas for the pool. It shows the established reserves of natural gas liquids as obtained by a judgment combination of proved and probable reserves. The following definitions have been used to categorize the reserves of natural gas liquids:

Proved Reserves - are the reserves of natural gas liquids estimated to be recoverable from proved gas reserves by processing

(a) where the processing facilities exist, to the extent for which facilities have been installed, and

(b) where processing facilities have not yet been planned, to the extent that it is estimated that facilities for extraction can be economically installed.

Probable Reserves - are the reserves of natural gas liquids estimated to be recoverable from probable gas reserves by processing

(a) where processing facilities exist, to the extent

for which facilities have been installed, and

(b) where processing facilities have not yet been planned,

to the extent that it is estimated that facilities for extraction can be economically installed,

and those additional volumes of natural gas liquids which it is estimated may be recovered economically from proved and probable gas reserves through the installation of additional recovery facilities in existing plants.

Established Reserves - are the reserves of natural gas liquids whose existence and estimated amount can reasonably be counted upon and include all of the proved reserves and a judgment portion of the probable reserves.

TABLE II-1

ESTABLISHED RESERVES OF NATURAL GAS LIQUIDS IN THE PROVINCE OF ALBERTA, DECEMBER 31, 1963

(1)	(2)	(3)	(4)	(5)			(6)			
			REMAINING MARKETABLE RESERVES OF NATURAL GAS	LIQUID RECOVERY RATIOS BBLS/MMcF (MARKETABLE GAS)			RECOVERABLE LIQUIDS MILLIONS OF BARRELS			
PLANT	FIELD OR AREA	ZONE	BCF	PROPANE	BUTANES	PENTANES PLUS	PROPANE	BUTANES	PENTANES PLUS	TOTAL
Bonnie Glen	Bonnie Glen	Leduc	514	20.0	14.0	14.0	10.3	7.2	7.2	24.7
	Glen Park	Leduc	6	41.0	20.0	23.0	0.3	0.1	0.1	0.5
	Wizard Lake	Leduc	85	41.0	20.0	21.0	3.5	1.7	1.8	7.0
							14.1	9.0	9.1	32.2
Carson Creek	Carson Creek	Beaverhill Lake	180		8.0	70.0		1.4	12.6	14.0
	Carson Creek North	Beaverhill Lake	170		12.0	40.0		2.0	6.8	8.8
								3.4	19.4	22.8
Calgary	Crossfield	Mississippian	545			26.0			14.2	14.2
		Wabamun	583			2.0			1.2	1.2
									15.4	15.4
Carstairs	Carstairs	Mississippian	834			29.0			24.2	24.2
	Crossfield	Mississippian	814			30.0			24.4	24.4
									48.6	48.6
	Crossfield East	Mississippian	100		10.0	45.0		1.0	4.5	5.5
	Edson	Mississippian	900			11.0			9.9	9.9
Gilby(1)	Gilby	Blairmore	98			11.0			1.1	1.1
		Jurassic	150			15.0			2.2	2.2
		Mississippian	229			12.0			2.8	2.8
									6.1	6.1
Harmattan-Elkton	Harmattan East	Mississippian	973	8.3	7.0	35.0	8.1	6.8	34.0	48.9
	Harmattan Elkton	Mississippian	984	4.2	3.8	33.0	4.1	3.7	32.5	40.3
							12.2	10.5	66.5	89.2
Leduc-Woodbend	Leduc-Woodbend	Nisku	50	14.0	12.0	5.0	0.7	0.6	0.3	1.6
		Leduc	333	28.0	19.0	10.0	9.3	6.3	3.3	18.9
							10.0	6.9	3.6	20.5
Lookout Butte	Lookout Butte	Mississippian	399	5.0	8.0	50.0	2.0	3.2	20.0	25.2

(1) Processing carried out in six separate plants.

(1)	(2)	(3)	(4)	(5)			(6)			
				LIQUID RECOVERY RATIOS BBLS/MMcf (MARKETABLE GAS)			RECOVERABLE LIQUIDS MILLIONS OF BARRELS			
PLANT	FIELD OR AREA	ZONE	REMAINING MARKETABLE RESERVES OF NATURAL GAS BCF	PROPANE	BUTANES	PENTANES PLUS	PROPANE	BUTANES	PENTANES PLUS	TOTAL
MINNEHIK-BUCK LAKE	MINNEHIK-BUCK LAKE	MISSISSIPPIAN	476			16.0			7.6	7.6
NEVIS[2]	FENN-BIG VALLEY	NISKU AND LEDUC	40	34.0	32.0	22.0	1.3	1.3	0.9	3.5
	NEVIS	DEVONIAN	467	4.0	4.0	16.0	1.9	1.9	7.5	11.3
	STETTLER	NISKU AND LEDUC	8	37.0	35.0	22.0	0.3	0.3	0.2	0.8
							3.5	3.5	8.6	15.6
OLDS	OLDS	WABAMUN	200			43.0			8.6	8.6
PEMBINA[3]	PEMBINA	BLAIRMORE	163	12.0	8.0	8.0	2.0	1.3	1.3	4.6
		CARDIUM	650	30.0	23.0	20.0	19.5	15.0	13.0	47.5
							21.5	16.3	14.3	52.1
PINCHER CREEK	PINCHER CREEK	MISSISSIPPIAN	810	3.9	6.0	21.0	3.2	4.9	17.0	25.1
REDWATER	REDWATER	LEDUC	31	100.0	75.0	35.0	3.1	2.3	1.1	6.5
RIMBEY	HOMEGLEN-RIMBEY	LEDUC	722	16.0	13.0	29.0	11.5	9.4	20.9	41.8
	WESTEROSE SOUTH	LEDUC	1,180	24.0	16.0	35.0	28.3	18.9	41.3	88.5
							39.8	28.3	62.2	130.3
SWAN HILLS[4]	JUDY CREEK	BEAVERHILL LAKE	199	70.0	32.0	16.0	13.9	6.4	3.2	23.5
	SWAN HILLS	BEAVERHILL LAKE	379	83.0	43.0	22.0	31.4	16.3	8.4	56.1
	VIRGINIA HILLS	BEAVERHILL LAKE	45	86.0	42.0	20.0	3.9	1.9	0.9	6.8
							49.2	24.6	12.5	86.3
TURNER VALLEY	TURNER VALLEY	MISSISSIPPIAN	210	6.1		18.0	1.3		3.8	5.1
WATERTON	WATERTON	MISSISSIPPIAN	673			46.0			30.9	30.9
		DEVONIAN	197			7.0			1.4	1.4
									32.3	32.3
WILDCAT HILLS	WILDCAT HILLS	MISSISSIPPIAN	574			9.0			5.2	5.2
WIMBORNE	WIMBORNE	LEDUC	223			26.0			5.8	5.8
WEST WHITECOURT	WINDFALL	LEDUC	480			120.0			57.6	57.6
SUB TOTAL							159.9	113.9	439.7	713.5

(2) PROCESSING CARRIED OUT IN TWO SEPARATE PLANTS.

(3) PROCESSING CARRIED OUT IN THREE SEPARATE PLANTS.

(4) PRODUCTS ARE RECOVERED AT LEDUC-WOODBEND PLANT.

PLANT	FIELD OR AREA	ZONE	REMAINING MARKETABLE RESERVES OF NATURAL GAS BCF	RECOVERABLE LIQUIDS MILLIONS OF BARRELS						
				PROPANE	BUTANES	PENTANES PLUS	PROPANE	BUTANES	PENTANES PLUS	TOTAL
OTHER RESERVES(5)										
	SMALL FIELDS						3.3	3.3	41.0	47.6
	SMALL FIELDS PRESENTLY BEYOND ECONOMIC REACH.								2.4	2.4
	GAS RE-PROCESSING - EDMONTON LIQUID GAS LTD.						10.0	3.0		13.0
		- PACIFIC PETROLEUMS LIMITED					80.0	40.0	9.0	129.0
TOTAL							253.2	160.2	492.1	905.5

(5) INCLUDES ALL FIELDS AND OTHER AREAS WHERE RECOVERABLE LIQUID RESERVES ARE ESTIMATED AT LESS THAN FIVE MILLION BARRELS, PLUS RESERVES RECOVERABLE BY THE RE-PROCESSING OF PIPE LINE GAS.

III. THE PROVED RECOVERABLE RESERVES OF CRUDE OIL IN THE PROVINCE OF ALBERTA

The Board has estimated the proved remaining recoverable reserves of crude oil in the Province as of December 31, 1963, to be 3.81 billion stock tank barrels. The corresponding estimate as of December 31, 1962, was 3.62 billion stock tank barrels.

The term "crude oil" used in this report has its ordinary meaning and excludes all condensate and natural gas liquids.

The reserve estimates for crude oil refer solely to proved reserves and include only crude oil recoverable under existing economic and operating conditions. The proved drilled reserves in any pool consist of the crude oil estimated to be recoverable by the production systems now in operation and from the area actually drilled on the spacing pattern in effect in that pool. The proved undrilled reserves are those under undrilled spacing units which are so close and so related to the drilled units that there is every reasonable probability that they will be produced when drilled, or will be recovered by existing wells. The reserves attributed in this report to areas subject to fluid injection operations comprise only those portions which the performance of the schemes to date indicate are reasonably certain to be recovered. The estimates do not include crude oil obtainable from oil sands, oil shale, coal or other substitute sources.

In the case of recent discoveries and of fluid injection schemes with only a year or two of history the estimates of proved reserves represent only a part of the reserves which may ultimately be assigned as

proved reserves.

The crude oil reserves have been established having regard to (1) independent studies of the Board staff, (2) submissions made to the Board by industry in connection with hearings respecting maximum permissive rates (MPR's) of production, and (3) submissions made to the Board respecting spacing units and fluid injection schemes.

The Board's findings with respect to the proved recoverable reserves of crude oil for the Province are set out in Table III-1. Certain of the pools tabulated in Table III-1 have been allocated proved reserves attributable to fluid injection schemes in effect and of proved efficiency. For these pools Table III-2 shows a comparison of recoverable reserves and recovery factors before and after allocation of additional reserves attributable to the scheme. The reserves are given in stock tank barrels at standard conditions. The tables do not list separately the pools in which the remaining recoverable reserves are less than five million stock tank barrels. The reserves of these minor or nearly depleted pools (whether in designated fields or not) make up the figure shown under "Other Pools".

TABLE III-1

PROVED RESERVES OF CRUDE OIL IN THE PROVINCE OF ALBERTA, DECEMBER 31, 1963

(1)	(2)	(3)	(4)	(5)	(6)
POOL	INITIAL CRUDE OIL IN PLACE MILLIONS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL MILLIONS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1963 MILLIONS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1963 MILLIONS OF ST BBL
Acheson D-3	150	0.60	90(1)	26.5	63.5
Bantry Blairmore	80	0.18	14	1.7	12.3
Bellshill Lake Blairmore	190	0.13	25	6.1	18.9
Big Lake D-3	23	0.60	14	2.1	11.9
Bonnie Glen D-3	590	0.59	350	77.0	273.0
Carson Creek North Beaverhill Lake A	68	0.15	10(2)	1.4	8.6
Carson Creek North Beaverhill Lake B	200	0.15	30(2)	2.7	27.3
Crossfield Cardium	160	0.10	16(2)	6.3	9.7
Cyn-Pem Cardium	50	0.12	6	0.2	5.8
Deer Mountain Beaverhill Lake	100	0.12	12(2)	0.9	11.1
Erskine D-3	35	0.40	14	9.9	4.1
Excelsior D-2	35	0.57	20	10.3	9.7
Fairydell D-3	18	0.47	8.5	3.3	5.2
Fenn-Big Valley D-2	360	0.50	180	64.7	115.3
Fenn West D-2	15	0.40	6	0.7	5.3
Gilby Jurassic B	80	0.12	9.6	1.0	8.6
Gibly Viking A	36	0.40	14(1)	8.3	5.7
Glen Park D-3	26	0.56	15	3.9	11.1
Golden Spike South D-3	320	0.69	220(1)	30.3	189.7

(1)	(2)	(3)	(4)	(5)	(6)
POOL	INITIAL CRUDE OIL IN PLACE MILLIONS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL MILLIONS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1963 MILLIONS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1963 MILLIONS OF ST BBL
HARMATTAN EAST RUNDLE	170	0.35	59	9.8	49.2
HARMATTAN ELKTON MAIN RUNDLE	170	0.33	56	14.3	41.7
HUSSAR OSTRACOD A	40	0.30	12	2.5	9.5
INNISFAIL D-3	120	0.50	60	14.0	46.0
JOARCAM VIKING	150	0.37	55(2)	45.8	9.2
JOFFRE D-2	140	0.14	20	11.7	8.3
JUDY CREEK BEAVERHILL LAKE	770	0.35	270(1)	13.3	256.7
JUDY CREEK WEST BEAVERHILL LAKE	230	0.15	35	3.3	31.7
KAYBOB BEAVERHILL LAKE A	290	0.15	43(2)	11.2	31.8
KAYBOB SOUTH TRIASSIC	80	0.15	12	0.3	11.7
LEDUC-WOODBEND D-2 A	210	0.35	73(2)	66.2	6.8
LEDUC WOODBEND D-3 A	300	0.60	180(1)	143.7	36.3
PEMBINA CARDIUM AREA A(3)	2,600(5)	0.15	390(2)	315.2	844.8
AREA B(4)	1,700(5)	0.45	770(1)		
REDWATER D-3	1,400	0.55	770	279.0	491.0
SIMONETTE D-3	70	0.40	28	2.7	25.3
SNIPE LAKE BEAVERHILL LAKE	170	0.12	20	0.6	19.4
STETTLER D-2	58	0.41	24(1)	12.8	11.2
STETTLER MAIN D-3	30	0.50	15	5.5	9.5
STURGEON LAKE D-3	38	0.50	19	4.3	14.7
STURGEON LAKE SOUTH D-3	240	0.50	120	22.0	98.0
SUNDRE RUNDLE A	80	0.25	20(2)	8.5	11.5
SWAN HILLS BEAVERHILL LAKE A AND B	2,500	0.17	420(2)	40.1	379.9
TURNER VALLEY RUNDLE	1,000	0.12	120(2)	111.9	8.1

(1)	(2)	(3)	(4)	(5)	(6)
POOL	INITIAL CRUDE OIL IN PLACE MILLIONS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL MILLIONS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1963 MILLIONS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1963 MILLIONS OF ST BBL
VIRGINIA HILLS BEAVERHILL LAKE	460	0.17	78(2)	9.1	68.9
WEST DRUMHELLER D-2	37	0.45	17	11.1	5.9
WESTEROSE D-3	160	0.63	100	16.3	83.7
WILLESDEN GREEN CARDIUM	320	0.08	26(2)	8.5	17.5
WIZARD LAKE D-3	380	0.58	220	40.2	179.8
OTHER POOLS	3,740		388.9	183.5	205.4
TOTAL	20,189		5,475	1,664.7	3,810.3

(1) SEE TABLE III-2.

(2) FLUID INJECTION SCHEMES ARE IN OPERATION BUT NO ADDITIONAL RECOVERABLE RESERVES ARE ATTRIBUTED TO THEM AS YET.

(3) AREA A COMPRISES THE PORTION OF THE POOL SUBJECT TO PRIMARY DEPLETION OR TO FLUID INJECTION SCHEMES OF UNDEMONSTRATED EFFICACY.

(4) AREA B COMPRISES THE PORTION OF THE POOL SUBJECT TO FLUID INJECTION SCHEMES FROM WHICH ADDITIONAL RECOVERY IS ASSURED.

(5) OIL IN PLACE ADJUSTED TO 1.0 MD CUT-OFF.

TABLE III-2

INCREASE IN PROVED INITIAL RECOVERABLE RESERVES OF CRUDE OIL ATTRIBUTABLE TO FLUID INJECTION SCHEMES, DECEMBER 31, 1963

(1)	(2)	(3)	(4)	(5)
POOL	NATURAL DEPLETION RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL BY NATURAL DEPLETION MILLIONS OF ST BBL	RECOVERY FACTOR INCLUDING EFFECT OF FLUID INJECTION FRACTION	INITIAL RECOVERABLE CRUDE OIL MILLIONS OF ST BBL
Acheson D-3	0.54	81	0.60	90
Gilby Viking A	0.20	7	0.40	14
Golden Spike South D-3	0.45	140	0.69	220
Judy Creek Beaverhill Lake	0.15	120	0.35	270
Leduc-Woodbend D-3 A	0.55	160	0.60	180
Pembina Cardium Area B[1]	0.20	350	0.45	770
Stettler D-2	0.30	18	0.41	24
Other Pools	0.17	18	0.33	35
TOTAL		894		1,603

(1) Area B comprises the portion of the pool subject to fluid injection schemes from which additional recovery is assured.

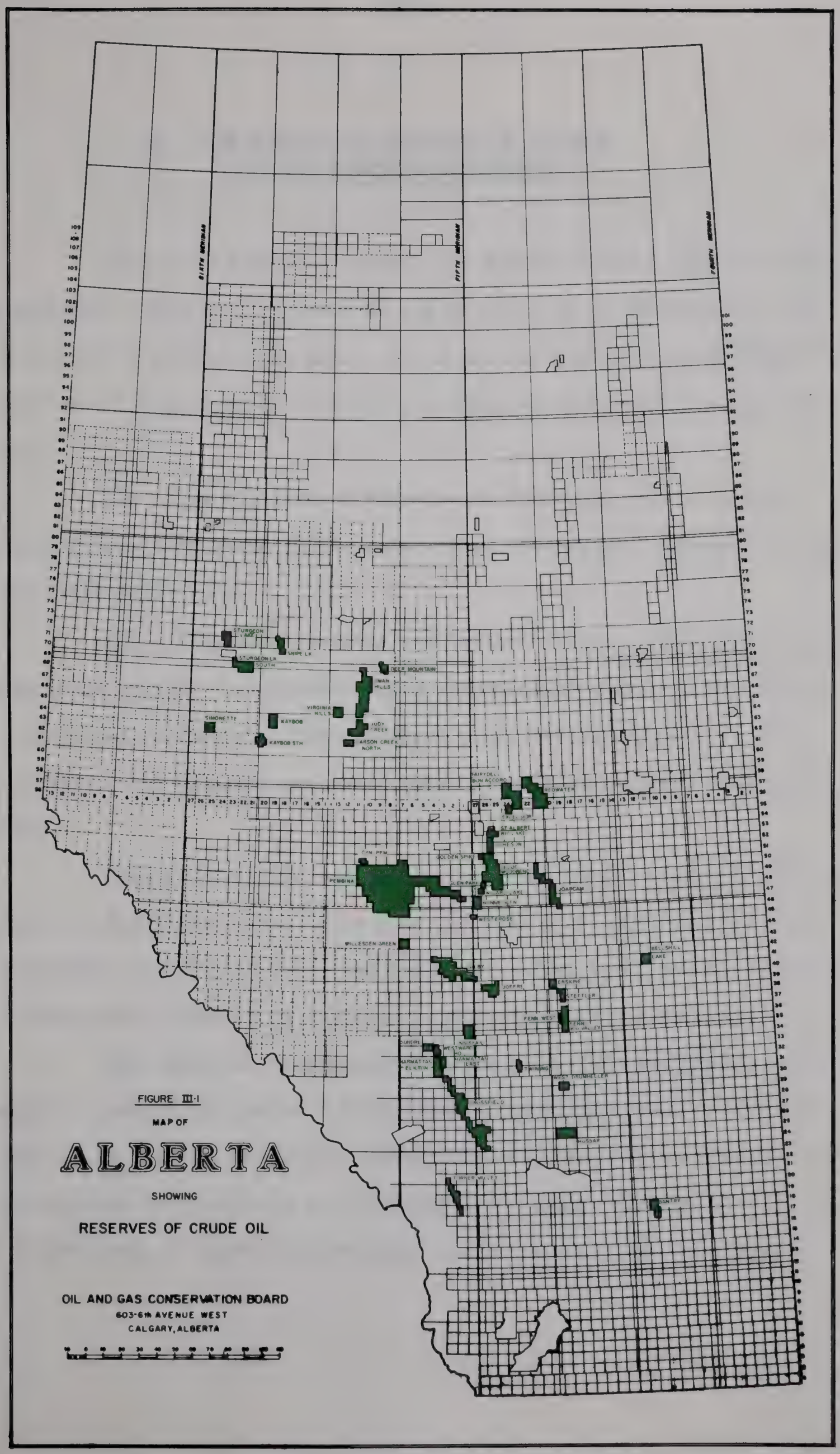


FIGURE III-1

MAP OF

ALBERTA

SHOWING

RESERVES OF CRUDE OIL

OIL AND GAS CONSERVATION BOARD
603-6th AVENUE WEST
CALGARY, ALBERTA

IV. THE ESTABLISHED RESERVES OF SULPHUR IN THE PROVINCE OF ALBERTA

In its last reserve report, the Board estimated the recoverable established reserves of sulphur in the Province as of December 31, 1962, to be some 80 million long tons. The Board now estimates the established reserves of sulphur as of December 31, 1963, to be some 77 million long tons.

The three million ton decrease in reserves, results almost entirely from a decrease in the established natural gas reserves for the Pine Creek Leduc Pool.

The established reserves are defined as those contained in pools from which sulphur is currently being recovered or where, in the opinion of the Board, sulphur will be recovered some time in the future. Not included in the estimate are the sulphur reserves associated with the oil sands.

Details of the Board's estimate of the sulphur reserves are presented in Table IV-1. The table does not list individual fields having recoverable reserves of less than one million long tons, however, the sum of these small reserves is included in the provincial total.

The table has been prepared by applying the appropriate hydrogen sulphide content and recovery efficiency to the established recoverable reserves of gas for each pool. Where sulphur is currently being recovered, the recovery efficiency is as specified in the plant approval or, where not specified, is based on plant experience. Where sulphur is expected

to be produced in the future, the recovery has been estimated at 90 to 95 per cent depending upon the size of the reserve and the percentage of hydrogen sulphide in the raw gas.

TABLE IV-1

ESTABLISHED RESERVES OF SULPHUR IN THE PROVINCE OF ALBERTA, DECEMBER 31, 1963

(1)	(2)	(3)	(4)	(5)	(6)
PLANT	FIELD OR AREA	ZONE	REMAINING RECOVERABLE RAW GAS BCF	HYDROGEN SULPHIDE CONTENT OF RAW GAS PER CENT	REMAINING RECOVERABLE SULPHUR 1000 LONG TONS
-	Berland River	Leduc	400	15.4	2,180
Calgary	Crossfield	Calgary Mississippian	641	0.9	200
	Crossfield	Wabamun	1,166	33.9	13,970
					14,170
Coleman	Savanna Creek	Mississippian	518	14.2	2,570
-	Crossfield East	Wabamun	300	38.1	3,870
-	Harmattan-Elkton	Mississippian	1,291	0.7	310
	Harmattan-Elkton	Leduc	75	53.4	1,355
					1,665
Nevis(1)	Fenn-Big Valley	Nisku and Leduc	62	3.0	60
	Nevis	Devonian	584	6.7	1,250
	Stettler	Nisku and Leduc	15	3.2	15
					1,325
Okotoks	Okotoks	Wabamun	330	34.4	4,055
-	Panther River(2)	Wabamun	110	87.0	3,420
Pincher Creek	Pincher Creek	Mississippian	1,080	10.8	3,950
Rimbey	Homeglen-Rimbey	Leduc	850	3.3	950
	Westerose South	Leduc	1,388	1.4	660
					1,610

(1) Processing carried out in two separate plants.

(2) Presently considered beyond economic reach.

(1)	(2)	(3)	(4)	(5)	(6)
PLANT	FIELD OR AREA	ZONE	REMAINING RECOVERABLE RAW GAS BCF	HYDROGEN SULPHIDE CONTENT OF RAW GAS PER CENT	REMAINING RECOVERABLE SULPHUR 1000 LONG TONS
-	SIMONETTE(2)	WABAMUN	123	18.5	770
	SIMONETTE(2)	LEDUC	100	16.6	560
					1,330
WATERTON	WATERTON	MISSISSIPPIAN	1,346	26.5	12,670
	WATERTON	DEVONIAN	246	22.2	1,940
					14,610
WEST WHITECOURT	BEAVER CREEK	WABAMUN	80	34.9	980
	PINE CREEK	WABAMUN	90	34.9	1,100
	PINE CREEK	LEDUC	773	26.1	7,090
	WINDFALL	LEDUC	739	15.6	4,050
					13,220
-	WIMBORNE	LEDUC	328	15.0	1,710
	OTHER FIELDS(3)				5,820
	OTHER FIELDS PRESENTLY CONSIDERED BEYOND ECONOMIC REACH(3)				1,630
TOTAL					77,135

(3) FIELDS AND AREAS HAVING SULPHUR RESERVES OF UNDER 1,000,000 LONG TONS.

V. TRENDS IN EXPLORATORY DRILLING AND IN THE GROWTH OF GAS AND CRUDE OIL RESERVES IN THE PROVINCE OF ALBERTA

In past years, a section dealing with trends in the growth of gas reserves has been included in Board reserve reports. This year, trends in the growth of crude oil reserves have been analyzed in a comparable manner.

Effective January 1, 1964, the Board adopted the Lahee system of well classification utilized by the American Association of Petroleum Geologists and by the Alberta Society of Petroleum Geologists. As a result, the Board's historical summary of exploratory drilling has been revised to reflect this change in classification and the category of total exploratory wells, as used in this report, is comprised of

(a) new field wildcats,

(b) new pool wildcats,

(c) shallow pool tests, and

(d) deep pool tests.

Annual drilling data since 1948 were converted to the new basis with an estimate made of the number of exploratory wells drilled prior to that date. The revised annual totals of exploratory wells, tabulated on Table V-1, are presented graphically as Figure V-1 for the period 1953 through 1963. Exploratory wells drilled to the end of 1963 total 6,301 by the Lahee system as compared with 6,681 by the previous classification. Assuming an ultimate density of one exploratory well per 10 square miles of prospective area, it is anticipated that about 20,000 exploratory

wells will eventually be drilled in Alberta.

The currently estimated initial marketable gas reserves, shown in Section I, are tabulated in Table V-1 according to year of discovery. In this table, the names of the major (10 billion cubic feet or over) pools and fields discovered each year are listed together with the annual number of exploratory wells and the initial marketable reserves attributed to each year's discoveries. Figure V-2 is a graphical presentation of this reserve data, together with the corresponding data of previous Board reserve reports. The long term growth rate of initial marketable gas reserves due both to new discoveries and to appreciation of known reserves has been about 2.5 trillion cubic feet per year, as indicated by the dashed line on Figure V-2.

Similarly, the initial proved crude oil reserves, as currently estimated and shown in Section III, are tabulated in Table V-2 according to year of discovery. It should be noted that for crude oil reserves, the discovery year is taken as the year in which production commenced rather than the year in which the first well was drilled in the pool. The table lists those oil pools having initial proved reserves of five million barrels or greater discovered each year along with exploratory drilling and crude oil reserve statistics. As in the case of gas, cumulative reserves, as currently estimated, are plotted versus year of discovery in Figure V-3, along with similar plots for the estimates of previous years. The long term growth of initial proved crude oil reserves, which has been about 0.34 billion stock tank barrels per year, is indicated on Figure V-3 by a dashed line.

Referring to Figures V-2 and V-3, the spread between any two points for a particular year represents the amount of appreciation during the period between successive estimates of reserves discovered to the end of that year.

The exploratory drilling and initial gas and crude oil reserve data of Tables V-1 and V-2, together with the amount of marketable gas and crude oil produced and the corresponding remaining reserves are summarized on Tables V-3 and V-4 respectively, by year of discovery. The reserves per exploratory well drilled, calculated on an annual basis, is shown in column 8 of Tables V-3 and V-4. Since the pools and fields discovered in the past few years are, for the most part, still in the discovery or early development stages and also because of the failure in recent years to locate many major gas or oil pools, the reserves per exploratory well over the past few years are below the average of previous years.

The Board has considered crediting gas or crude oil reserves to the number of exploratory wells drilled primarily for gas or oil, respectively. However, it was decided that the problem of dividing exploratory wells drilled each year into gas-directed and crude oil-directed wells was virtually insoluble and that, in any case, an analysis on this basis would not necessarily be more reliable than one based on total exploratory wells.

In previous reports, the appreciation of gas reserves in the years following discovery has been analyzed as a means of estimating the future appreciation of recent discoveries. The method adopted involves determining the percentage increase in estimated initial gas reserves as a function of the elapsed time from an average date of discovery to the date of subsequent reserve determinations. Data for discoveries made in each of the years 1951 to 1961 inclusive, are plotted on Figure V-4. A reserve weighted

normal appreciation curve constructed on the basis of these data is shown as a red line on Figure V-4.

This appreciation curve tends to level off after approximately seven years at which time it may be assumed that the average gas reserve is fully evaluated. The rate of development in individual cases will, of course, be influenced by such factors as existence and proximity of markets, areal extent, and the amount and type of surface processing required. Lack of markets may be partially responsible for the fact that no development drilling has been done for two-thirds of the major gas pools discovered in the period 1959 through 1962. This fact tends to lower the percentage appreciation for these particular years below the normal appreciation curve. As a result, the actual future appreciation of these reserves may exceed the amount as estimated using the normal appreciation curve of Figure V-4.

In obtaining the normal crude oil reserve appreciation curve shown in Figure V-5, the appreciation experience of existing crude oil pools was weighted volumetrically and the resulting trend smoothed. The trend was further modified to provide, for existing crude oil pools, fully appreciated reserves which appear reasonable to the Board having regard to the susceptibility of the pools to recovery improvement by fluid injection and, in the case of pools likely to remain subject to natural depletion mechanisms, to the probability that future performance will warrant the assignment of additional reserves. From experience in Alberta and other areas, the Board believes that the appreciation of many crude oil reserves will extend over 20 to 30 years. Since only the first 16 years of the appreciation trend is considered, some appreciation beyond that recognized

in this report can be expected.

It may be noted in comparing the time scales of Figures V-4 and V-5 that, due to differences in the dates of historical reserve estimates involved, the appreciation of gas reserves has been determined on a slightly different basis than the appreciation of crude oil reserves.

The current reserve estimates for gas and crude oil discoveries have been adjusted to appreciated values using the respective normal appreciation curves. The appreciation factors used and the corresponding adjusted reserves are presented in Tables V-5 and V-6.

Initial gas reserves, now estimated to total 36.7 trillion cubic feet, are expected to appreciate by over two trillion cubic feet to about 39 trillion cubic feet. The fully appreciated gas reserves per exploratory well are calculated as shown in column 7 of Table V-5. Similarly, the initial proved crude oil reserves, now estimated to total 5.45 billion stock tank barrels, are expected to appreciate by about 1.4 billion barrels to some 6.8 billion stock tank barrels. The resulting appreciated crude oil reserves per exploratory well are shown in column 7 of Table V-6.

Both the currently established and the appreciated reserves per exploratory well are plotted for the 10-year period, 1953 through 1963, as Figure V-6 for gas and Figure V-7 for crude oil. The appropriate data from column 8 of Tables V-3 and V-4 were used for the current ratio of reserves per exploratory well and from column 7 of Tables V-5 and V-6 for the appreciated ratios. The two plots exhibit extreme fluctuations from year to year with an obvious overall decline due to the low success of recent years.

The Board has made a number of attempts to forecast the ultimate reserves of gas and crude oil in the Province by projection of the previously discussed trends.

In the case of gas reserves, the Board believes that the lack of incentive to develop gas reserves, which has existed over the past several years because of the lack of markets, is partly responsible for the low reserves per exploratory well in recent years. This unfavorable experience has significantly influenced the trends in the growth of gas reserves and, for this reason, the Board has found it difficult to make realistic forecasts. From such projections as the Board has been able to make and having regard to the volume of sediments remaining unexplored, the Board believes that ultimate gas reserves in the order of 60 to 80 trillion cubic feet are likely.

With regard to crude oil reserves, the low discovery rate of recent years makes it almost impossible to reasonably predict the ultimate crude oil reserves from the trend of reserves discovered per exploratory well. The Board believes such periods of poor results are to be expected in the course of exploration and does not feel that they should be given a great deal of weight in establishing long term trends. However, having some regard for the recent unfavorable experience, keeping in mind the volume of sediments that remain unexplored and taking into account the estimates of other organizations, the Board believes the ultimate crude oil reserves will exceed 12 billion barrels.

TABLE V-1

TRENDS IN EXPLORATORY DRILLING AND GROWTH OF MARKETABLE GAS RESERVES IN THE PROVINCE OF ALBERTA

(1)	(2)	(3)	(4)	(5)	(6)
	EXPLORATORY WELLS DRILLED			INITIAL MARKETABLE RESERVES	
YEAR	ANNUAL	CUMULATIVE	MAJOR GAS RESERVES DISCOVERED	ANNUAL BCF	CUMULATIVE BCF
Prior to 1931			Bow Island, Brooks, Foremost, Medicine Hat (Medicine Hat, Bow Island), Pouce Coupe, Turner Valley (Mississippian Associated), Viking-Kinsella (Viking), and Wainwright.	3,143	3,143
1931 to 1940			Aden (Bow Island, Basal Colorado, Mississippian), Bantry, Lloydminster, Princess, Turner Valley (Mississippian Solution), Wildmere, and one small pool.	687	3,830
1941 to 1945			Black Butte (Bow Island, Sunburst-Ellis, Mississippian), Jumping Pound, Oyen (Viking), Suffield (Milk River), and four small pools.	719	4,549
1946		484(E)	Beaverhill Lake (Viking), Brooks North-east (Mannville), Lindbergh, Pendant d'Oreille (Bow Island), and Provost.	898	5,447
1947		555	Fairydell-Bon Accord, Leduc-Woodbend, Manyberries, Medicine Hat (Ellis), Smith Coulee, and three small pools.	768	6,215
1948	124	679	Brooks North-east (Bow Island), Morinville, Pincher Creek, Redwater, and four small pools.	1,196	7,411

(1)	(2)	(3)	(4)	(5)	(6)
	EXPLORATORY WELLS DRILLED			INITIAL MARKETABLE RESERVES	
YEAR	ANNUAL	CUMULATIVE	MAJOR GAS RESERVES DISCOVERED	ANNUAL BCF	CUMULATIVE BCF
1949	212	891	Acheson East, Bolloque Lake, Boyle-Mustang-Amisk Lake, Campbell-Namao, Castor, Cessford, Excelsior, Golden Spike, Inland, Joarcam, Lac La Biche, Normandville (Gething), Plain Lake, Rochester, Stettler, Westlock (Viking), Willingdon, and eleven small pools.	2,191	9,602
1950	210	1,101	Acheson, Countess (Bow Island), Drumheller (Blairmore), Fenn-Big Valley, Jarvie, Rolling Hills (Bow Island), Sibbald, Whitelaw, and eighteen small pools.	410	10,012
1951	346	1,447	Atlee-Buffalo (Bow Island), Belloy (Cadotte, Gething, Mississippian), Bonnie Glen, Clive, Countess (Basal Colorado), Etzikom (Bow Island), Figure Lake, Fort Saskatchewan, Glen Park, Hamelin Creek, Majeau Lake, Millet, Okotoks, Tangent, Viking-Kinsella (Blairmore, Devonian), Wizard Lake, and twenty small pools.	1,670	11,682
1952	442	1,889	Alix, Bindloss (Viking), Bittern Lake, Chigwell, Comrey (Bow Island), Dixonville, Eaglesham (Mississippian), Erskine, Gordondale (Paddy), Hackett, Hairy Hill, Hamilton Lake, Hercules, Holmberg, Hussar (Blairmore), Minnehik-Buck Lake, Nevis, Olds, Phil Can, Rycroft, St. Albert-Big Lake, St. Brides, West Drumheller, Westerose, Wildunn Creek, and twenty-four small pools.	2,976	14,658

(1)	(2)	(3)	(4)	(5)	(6)
	EXPLORATORY WELLS DRILLED			INITIAL MARKETABLE RESERVES	
YEAR	ANNUAL	CUMULATIVE	MAJOR GAS RESERVES DISCOVERED	ANNUAL BCF	CUMULATIVE BCF
1953	338	2,227	Atlee-Buffalo (Basal Blairmore), Donalda (Viking, Detrital), Dyberg, Enchant, Eyremore, Gilby (Viking, Jurassic), Gordondale (Notikewin, Gething), Homeglen-Rimbey, Kessler (Viking), Kneller, Parkland North-east, Pembina (Cardium Solution), Pouce Coupe South (Peace River, Triassic), Rich, Samson, Sedalia, Steen River, Sturgeon Lake South (Gething, Leduc), Sturgeon Lake South General Area (Gething, Permo-Penn), Sylvan Lake (Blairmore, Mississippian), Three Hills Creek (Viking, Mississippian), Usona, Waterglen, Wayne-Rosedale (Viking, Blairmore), Westerose South (Leduc), Wood River, and seventeen small pools.	4,592	19,250
1954	368	2,595	Alexander, Bellshill Lake (Viking, Blairmore), Bindloss (Basal Blairmore), Braeburn, Crossfield (Wabamun), Garrington (Leduc), Ghost Pine (Blairmore), Gilby (Basal Blairmore, Mississippian, Banff, Wabamun), Harmattan-Elkton (Mississippian Associated), Holborne, Hussar (Viking), Pembina (Belly River), Saddle Hills (Peace River, Gething), Sarcee, Savanna Creek, Turin (Bow Island, Basal Blairmore), Willesden Green (Cardium Soltuion), Wimborne (Viking, Leduc), and fourteen small pools.	3,203	22,453
1955	351	2,946	Aden (Sunburst-Ellis), Burnt River, Carbon (Blairmore), Chinook Ridge, Control, Harmattan-Elkton (Mississippian Solution), Hussar (Basal Colorado), Lone Pine Creek (Wabamun), Pakowki Lake, Red Willow (Viking), Richdale, Rolling Hills (Basal Colorado),		

(1)	(2)	(3)	(4)	(5)	(6)
	EXPLORATORY WELLS DRILLED			INITIAL MARKETABLE RESERVES	
YEAR	ANNUAL	CUMULATIVE	MAJOR GAS RESERVES DISCOVERED	ANNUAL BCF	CUMULATIVE BCF
1955 (CONT)			SUNDRE (MISSISSIPPIAN ASSOCIATED AND SOLUTION), WESTWARD HO (MISSISSIPPIAN SOLUTION), WINDFALL (VIKING, LEDUC), AND NINETEEN SMALL POOLS.	1,182	23,635
1956	373	3,319	BEAVER CREEK, CONNORSVILLE, CROSSFIELD (CARDIUM SOLUTION, MISSISSIPPIAN), EAGLESHAM (GETHING, CADOMIN), ESTHER, GOODWIN LAKE, HARMATTAN EAST (MISSISSIPPIAN ASSOCIATED), INNISFAIL (MISSISSIPPIAN, WABAMUN), JOFFRE (NISKU SOLUTION), KIRKCALDY (BASAL MANNVILLE), MAZEPPA, MOUNTAIN PARK, NORMANDVILLE (TRIASSIC, MISSISSIPPIAN), OBED, PADDLE RIVER, PEMBINA (VIKING, MISSISSIPPIAN), PINE CREEK (WABAMUN), STANDARD, STEEP CREEK (GETHING, TRIASSIC), TWO CREEK, WATERTON (MISSISSIPPIAN), WEST PRAIRIE, AND THIRTY-THREE SMALL POOLS.	3,721	27,356
1957	452	3,771	ANTELOPE, BLUERIDGE, CARSON CREEK, CHISHOLM, CROSSFIELD (BASAL BLAIRMORE), FAUST SOUTH, GARRINGTON (VIKING), HARMATTAN EAST (MISSISSIPPIAN SOLUTION), HARMATTAN-ELKTON (MISSISSIPPIAN NON-ASSOCIATED), INNISFAIL (LEDUC), JOFFRE (VIKING, BASAL BLAIRMORE), KAYBOB (NOTIKEWIN, CADOMIN, WINTERBURN, BEAVERHILL LAKE), LAMBERT CREEK, LOVETT RIVER (RUNDLE), PEMBINA (BLAIRMORE, NORDEGG), PINE CREEK (LEDUC), SADDLE HILLS (PERMO-PENN), STOLBERG, SUNDRE (VIKING, BASAL BLAIRMORE), SWAN HILLS (BEAVERHILL LAKE SOLUTION), VIRGINIA HILLS (BLAIRMORE, BEAVERHILL LAKE SOLUTION, SLAVE POINT), AND TWENTY-FOUR SMALL POOLS.	2,390	29,746
1958	428	4,199	BERLAND RIVER, BERLAND RIVER WEST, BOUNDARY LAKE SOUTH, CAROLINE, CARSON CREEK NORTH, CARSTAIRS (MISSISSIPPIAN), CLEAR HILLS, FOX CREEK WEST (NISKU),		

(1)	(2)	(3)	(4)	(5)	(6)
	EXPLORATORY WELLS DRILLED			INITIAL MARKETABLE RESERVES	
YEAR	ANNUAL	CUMULATIVE	MAJOR GAS RESERVES DISCOVERED	ANNUAL BCF	CUMULATIVE BCF
1958 (CONT)			GREENCOURT (JURASSIC-DETRITAL), PENHOLD, POUCE COUPE SOUTH (GETHING), PREVO, SIMONETTE (LEDUC), STEEP CREEK (PERMO-PENN), WATERTON (DEVONIAN), WILDCAT HILLS, WOKING, AND TWENTY-FIVE SMALL POOLS.	2,540	32,286
1959	438	4,637	BIGORARY (MISSISSIPPIAN), BIGSTONE (DUNVEGAN), BRAZEAU RIVER, BURNT TIMBER, JUDY CREEK, LOOKOUT BUTTE, LOVETT RIVER (BLAIRMORE), MEDICINE RIVER (BLAIRMORE, JURASSIC ASSOCIATED), RETLAW (BOW ISLAND, BASAL BLAIRMORE), SIMONETTE (WABAMUN), SUNDRE (MISSISSIPPIAN NON-ASSOCIATED), WASKAHIGAN, WORSLEY, AND TWENTY-THREE SMALL POOLS.	1,425	33,711
1960	412	5,049	BIGORARY (BLAIRMORE), BIGSTONE (GETHING, LEDUC), BLACK BUTTE (BASAL COLORADO), BLINDMAN RIVER (MISSISSIPPIAN), BROWN CREEK, CARSON LAKE, CROSSFIELD EAST (MISSISSIPPIAN), KAYBOB (GETHING), KAYBOB SOUTH (VIKING), KIRKCALDY (MISSISSIPPIAN), MOOSE MOUNTAIN, NORDEGG, RAVEN RIVER (VIKING, MISSISSIPPIAN), REDLAND (BLAIRMORE), ROWLEY (VIKING, MISSISSIPPIAN), SIEU RIVER, SIMONETTE (CADOMIN), STURGEON LAKE SOUTH GENERAL AREA (CADOMIN), WILDHORSE CREEK, WILLESDEN GREEN (BASAL BLAIRMORE), WOLF LAKE, AND THIRTY-SIX SMALL POOLS.	811	34,522
1961	395	5,444	BLINDMAN RIVER (BANFF), CRAIGEND, CROSSFIELD EAST (WABAMUN), GREEN-COURT (MISSISSIPPIAN), HARMATTAN-ELKTON (LEDUC), KAYBOB SOUTH (CADOMIN, NISKU, BEAVERHILL LAKE), MARTEN HILLS (WABISKAW, WABAMUN), MORLEYVILLE (MISSISSIPPIAN), PENDANT D'OREILLE (MANNVILLE), SYLVAN LAKE (EDMONTON, LEDUC), TWINING NORTH (MISSISSIPPIAN), VERGER (BASAL		

(1)	(2)	(3)	(4)	(5)	(6)
	EXPLORATORY WELLS DRILLED			INITIAL MARKETABLE RESERVES	
YEAR	ANNUAL	CUMULATIVE	MAJOR GAS RESERVES DISCOVERED	ANNUAL BCF	CUMULATIVE BCF
1961 (CONT)			MANNVILLE), WAIPAROUS CREEK, WESTWARD HO (VIKING, BLAIRMORE), AND EIGHTEEN SMALL POOLS.	772	35,294
1962	433	5,877	EDSON, HUNTER VALLEY, JUMPING POUND WEST, KAYBOB SOUTH (TRIASSIC), STRATHMORE, SYLVAN LAKE (JURASSIC), TWINING (MISSISSIPPIAN NON-ASSOCIATED), VIRGINIA HILLS (TRIASSIC), AND TWENTY-THREE SMALL POOLS.	1,328	36,622
1963	424	6,301	SWALWELL (MISSISSIPPIAN), AND TWENTY-SEVEN SMALL POOLS.	109	36,731

TABLE V-2

TRENDS IN EXPLORATORY DRILLING AND GROWTH OF PROVED CRUDE OIL RESERVES IN THE PROVINCE OF ALBERTA

(1)	(2)	(3)	(4)	(5)	(6)
	EXPLORATORY WELLS DRILLED			INITIAL PROVED RESERVES	
YEAR	ANNUAL	CUMULATIVE	MAJOR OIL POOLS DISCOVERED	ANNUAL MILLIONS OF BBL.	CUMULATIVE MILLIONS OF BBL.
Prior to 1931			Turner Valley Rundle. Wainwright Wainwright, and two small pools.	128	129
1931 to 1940			Lloydminster Sparky, and one small pool.	18	147
1941 to 1946		484(E)	Six small pools	6	153
1947	71	555	Leduc-Woodbend D-2 A, Del Bonita Rundle, and one small pool.	253	406
1948	124	579	Leduc-Woodbend D-3 A, Redwater D-3, Bantry Mannville.	793	1,199
1949	212	891	Excelsior D-2, Golden Spike South D-3, Joarcam Viking, Leduc-Woodbend D-3 B, Stettler D-2, Stettler Main D-3.	343	1,542
1950	210	1,101	Acheson D-3, Duhamel North D-3, Fenn-Big Valley Fenn-Big Valley D-2, Leduc-Woodbend D-2 B, and nine small pools.	302	1,844
1951	346	1,447	Duhamel D-2, Glen Park D-3, New Norway D-2, Wizard Lake D-3, and eighteen small pools.	264	2,108
1952	442	1,889	Bonnie Glen D-3, Malmo D-2, Sturgeon Lake D-3, West Drumheller D-2, Westerose D-3, Erskine D-3, and eighteen small pools.	533	2,641

(1)	(2)	(3)	(4)	(5)	(6)
	EXPLORATORY WELLS DRILLED			INITIAL PROVED RESERVES	
YEAR	ANNUAL	CUMULATIVE	MAJOR OIL POOLS DISCOVERED	ANNUAL MILLIONS OF BBL.	CUMULATIVE MILLIONS OF BBL.
1953	338	2,227	Fairydell-Bon Accord Fairydell D-3, Homeglen-Rimbey D-3, Joffre Viking, Pembina Cardium, Sturgeon Lake South D-3, Gilby Viking A, and fourteen small pools.	1,349	3,990
1954	368	2,595	Fenn-Big Valley Fenn North D-3, Garrington Cardium, Glenevis Banff, Hespero Rundle, Little Smoky D-3, Pembina Belly River I, Willesden Green Cardium, and thirteen small pools.	66	4,056
1955	351	2,946	Harmattan-Elkton Main Rundle, Sundre Rundle A, Westward Ho Rundle, and eleven small pools.	88	4,144
1956	373	3,319	Bellshill Lake Blairmore, Crossfield Cardium, Joffre D-2, St. Albert-Big Lake Big Lake D-3, Wimborne D-3, and fourteen small pools.	91	4,235
1957	452	3,771	Harmattan East Rundle, Innisfail D-3, Kaybob Beaverhill Lake A, Swan Hills Beaverhill Lake, Virginia Hills Beaverhill Lake, Gilby Jurassic B, and eleven small pools.	672	4,907
1958	428	4,199	Carson Creek North Beaverhill Lake B, Hussar Ostracod A, Pembina Keystone Belly River B, Simonette D-3, and nineteen small pools.	88	4,995
1959	458	4,637	Carson Creek North Beaverhill Lake A, Deer Mountain Beaverhill Lake,		

(1)	(2)	(3)	(4)	(5)	(6)
	EXPLORATORY WELLS DRILLED			INITIAL PROVED RESERVES	
YEAR	ANNUAL	CUMULATIVE	MAJOR OIL POOLS DISCOVERED	ANNUAL MILLIONS OF BBL.	CUMULATIVE MILLIONS OF BBL.
1959 (cont)			Judy Creek Beaverhill Lake, Judy Creek West Beaverhill Lake, Pembina Keystone Belly River C, and eighteen small pools.	340	5,335
1960	412	5,049	Thirteen small pools.	10	5,345
1961	395	5,444	Buffalo Lake D-3, Fenn West D-2, Twining North Rundle, and fifteen small pools.	23	5,368
1962	433	5,877	Snipe Lake Beaverhill Lake, Sylvan Lake Pekisko B, and twenty-two small pools.	48	5,416
1963	424	6,301	Cyn-Pem Cardium, Kaybob South Triassic, Sylvan Lake Elkton C, Medicine River Jurassic D, and thirty-two small pools.	36	5,452

TABLE V-3

TRENDS IN EXPLORATORY DRILLING AND IN THE DISCOVERY OF INITIAL MARKETABLE GAS RESERVES

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	EXPLORATORY WELLS DRILLED		MARKETABLE GAS RESERVES AS OF DECEMBER 31, 1963 BILLIONS OF CUBIC FEET				GAS RESERVES PER EXPLORATORY WELL BCF/WELL
DISCOVERY YEAR	ANNUAL	CUMULATIVE	INITIAL	PRODUCED	REMAINING	CUMULATIVE INITIAL	ANNUAL
PRIOR TO 1947		484(E)	5,447	1,700	3,747	5,447	
1947	71	555	768	155	613	6,215	10.8
1948	124	679	1,196	242	954	7,411	9.6
1949	212	891	2,191	216	1,975	9,602	10.4
1950	210	1,101	410	44	366	10,012	2.0
1951	346	1,447	1,670	204	1,466	11,682	4.8
1952	442	1,889	2,976	269	2,707	14,658	6.7
1953	338	2,227	4,592	450	4,142	19,250	13.6
1954	368	2,595	3,203	127	3,076	22,453	8.7
1955	351	2,946	1,182	60	1,122	23,635	3.4
1956	373	3,319	3,721	117	3,604	27,356	10.0
1957	452	3,771	2,390	87	2,303	29,746	5.3
1958	428	4,199	2,540	133	2,407	32,286	5.9
1959	438	4,637	1,425	17	1,408	33,711	3.3
1960	412	5,049	811	4	807	34,522	2.0
1961	395	5,444	772	5	767	35,294	2.0
1962	433	5,877	1,328	-	1,328	36,622	3.1
1963	424	6,301	109	-	109	36,731	0.3

TABLE V-4

TRENDS IN EXPLORATORY DRILLING AND THE DISCOVERY OF INITIAL PROVED CRUDE OIL RESERVES

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	EXPLORATORY WELLS DRILLED		CRUDE OIL RESERVES AS OF DECEMBER 31, 1963 MILLIONS OF STOCK TANK BARRELS				CRUDE OIL RESERVES PER EXPLORATORY WELL MILLIONS OF STBBL/WELL
DISCOVERY YEAR	ANNUAL	CUMULATIVE	INITIAL	PRODUCED	REMAINING	CUMULATIVE INITIAL	ANNUAL
PRIOR TO 1947		484	153	139	14	153	
1947	71	555	253	210	43	406	3.57
1948	124	679	793	289	504	1,199	6.40
1949	212	891	343	113	230	1,542	1.62
1950	210	1,101	302	118	184	1,844	1.44
1951	346	1,447	264	59	205	2,108	0.76
1952	442	1,889	533	137	396	2,641	1.21
1953	338	2,227	1,349	386	963	3,990	3.99
1954	368	2,595	66	24	42	4,056	0.18
1955	351	2,946	88	30	58	4,144	0.25
1956	373	3,319	91	31	60	4,235	0.25
1957	452	3,771	672	86	586	4,907	1.49
1958	428	4,199	88	13	75	4,995	0.21
1959	438	4,637	340	21	319	5,335	0.78
1960	412	5,049	10	2	8	5,345	0.03
1961	395	5,444	23	3	20	5,368	0.06
1962	433	5,877	48	2	46	5,416	0.11
1963	424	6,301	36	2	34	5,452	0.09

TABLE V-5

ANTICIPATED APPRECIATION OF GAS RESERVES AND CORRESPONDING ADJUSTED RESERVES PER EXPLORATORY WELL

(1)	(2)	(3)	(4)	(5)	(6)	(7)
DISCOVERY YEAR	INITIAL MARKETABLE RESERVES AS OF DECEMBER 31, 1963 BCF	AVERAGE DISCOVERY DATE TO DECEMBER 31, 1963 YEARS	APPRECIATION FACTOR	ULTIMATE INITIAL MARKETABLE RESERVES BILLIONS OF CUBIC FEET ANNUAL	CUMULATIVE	ADJUSTED GAS RESERVES PER EXPLORATORY WELL BCF/WELL ANNUAL
Prior to 1957	27,356	7.5	1.00		27,360	
1957	2,390	6.5	1.01	2,410	29,770	5.3
1958	2,540	5.5	1.02	2,590	32,360	6.1
1959	1,425	4.5	1.09	1,550	33,910	3.5
1960	811	3.5	1.21	980	34,890	2.4
1961	772	2.5	1.44	1,110	36,000	2.8
1962	1,328	1.5	1.9	2,520	38,520	5.8
1963	109	0.5	4.	430	38,950	1.0

TABLE V-6

ANTICIPATED APPRECIATION OF CRUDE OIL RESERVES AND CORRESPONDING ADJUSTED RESERVES PER EXPLORATORY WELL

	(2)	(3)	(4)	(5)	(6)	(7)
DISCOVERY YEAR	INITIAL PROVED RESERVES AS OF DECEMBER 31, 1963 MILLIONS OF STBBL	PERIOD FROM DISCOVERY YEAR TO DECEMBER 31, 1963 YEARS	APPRECIATION FACTOR	ULTIMATE INITIAL PROVED RESERVES MILLIONS OF STBBL ANNUAL	CUMULATIVE	ADJUSTED CRUDE OIL RESERVES PER EXPLORATORY WELL MILLIONS OF STBBL/WELL ANNUAL
PRIOR TO 1948	407	-	1.00		407	
1948	793	15	1.01	805	1,212	6.50
1949	343	14	1.04	357	1,569	1.68
1950	302	13	1.06	320	1,889	1.53
1951	264	12	1.10	289	2,178	0.84
1952	533	11	1.12	595	2,773	1.35
1953	1,349	10	1.16	1,560	4,333	4.61
1954	66	9	1.21	79	4,412	0.21
1955	88	8	1.27	112	4,524	0.32
1956	91	7	1.36	124	4,648	0.33
1957	672	6	1.47	986	5,634	2.18
1958	88	5	1.6	142	5,776	0.33
1959	340	4	1.8	624	6,400	1.42
1960	10	3	2.2	22	6,422	0.05
1961	23	2	2.6	61	6,483	0.15
1962	48	1	3.5	167	6,650	0.39
1963	36	0	5.3	191	6,841	0.45

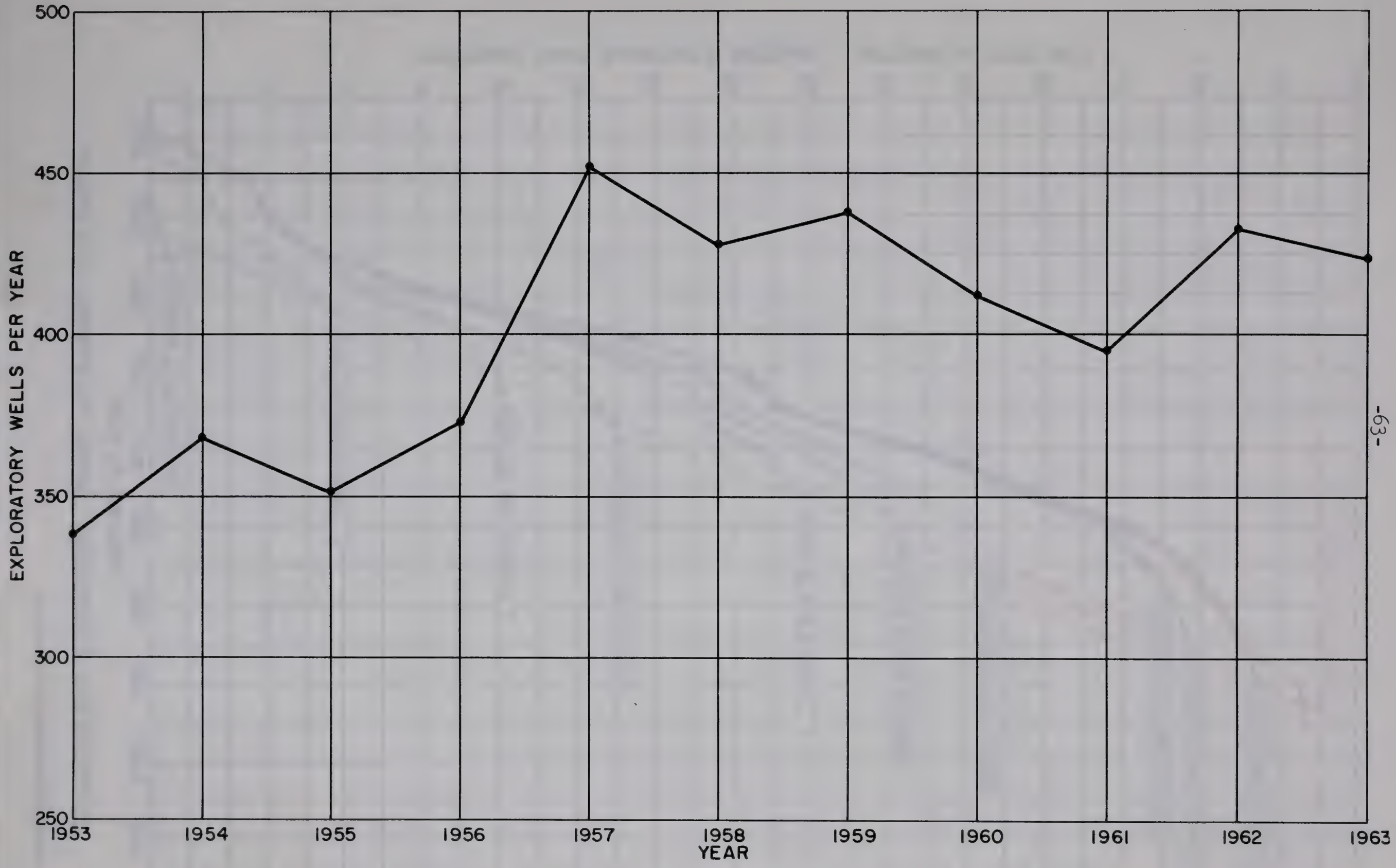
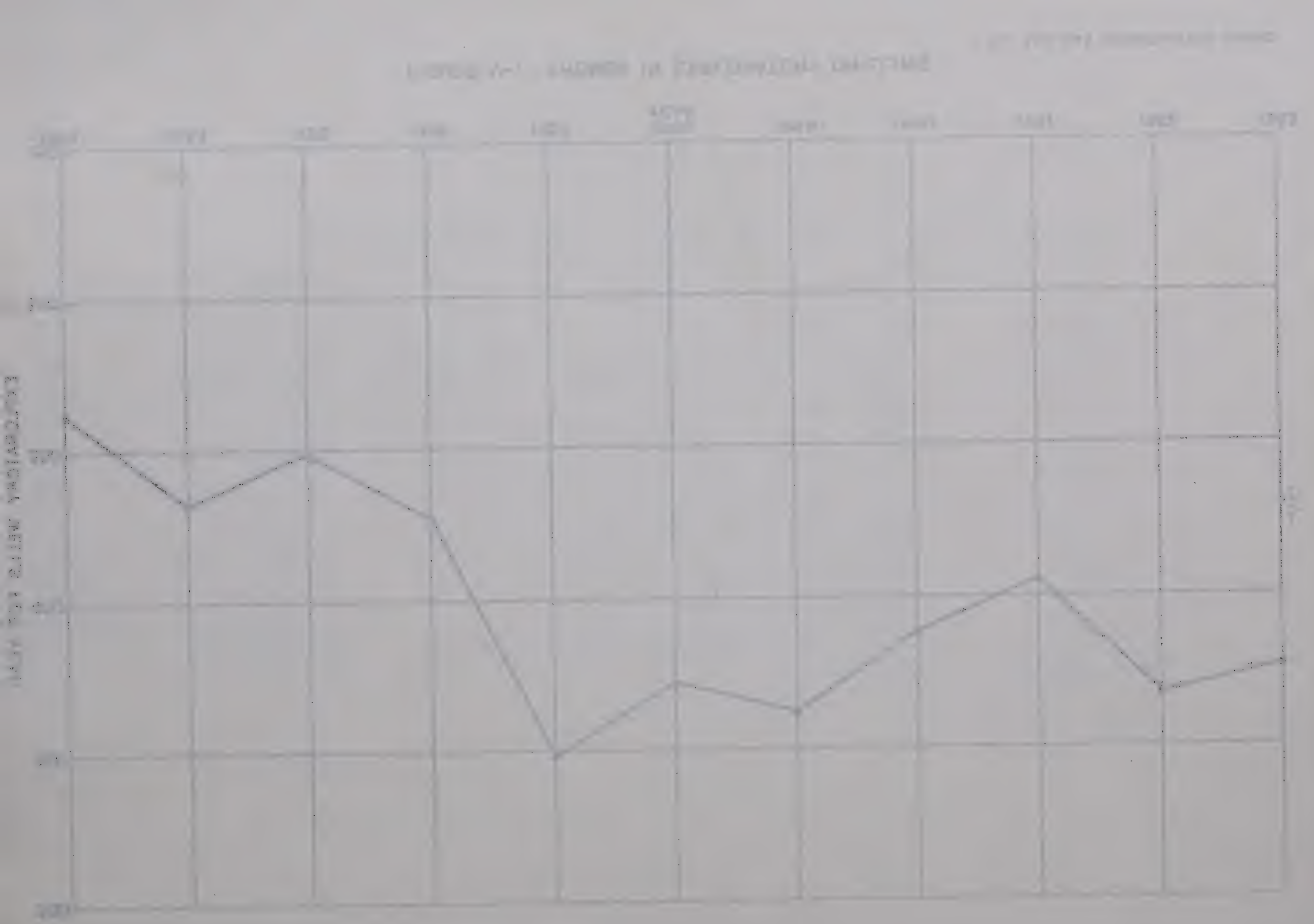


FIGURE V-1 TRENDS IN EXPLORATORY DRILLING

OIL AND GAS CONSERVATION BOARD



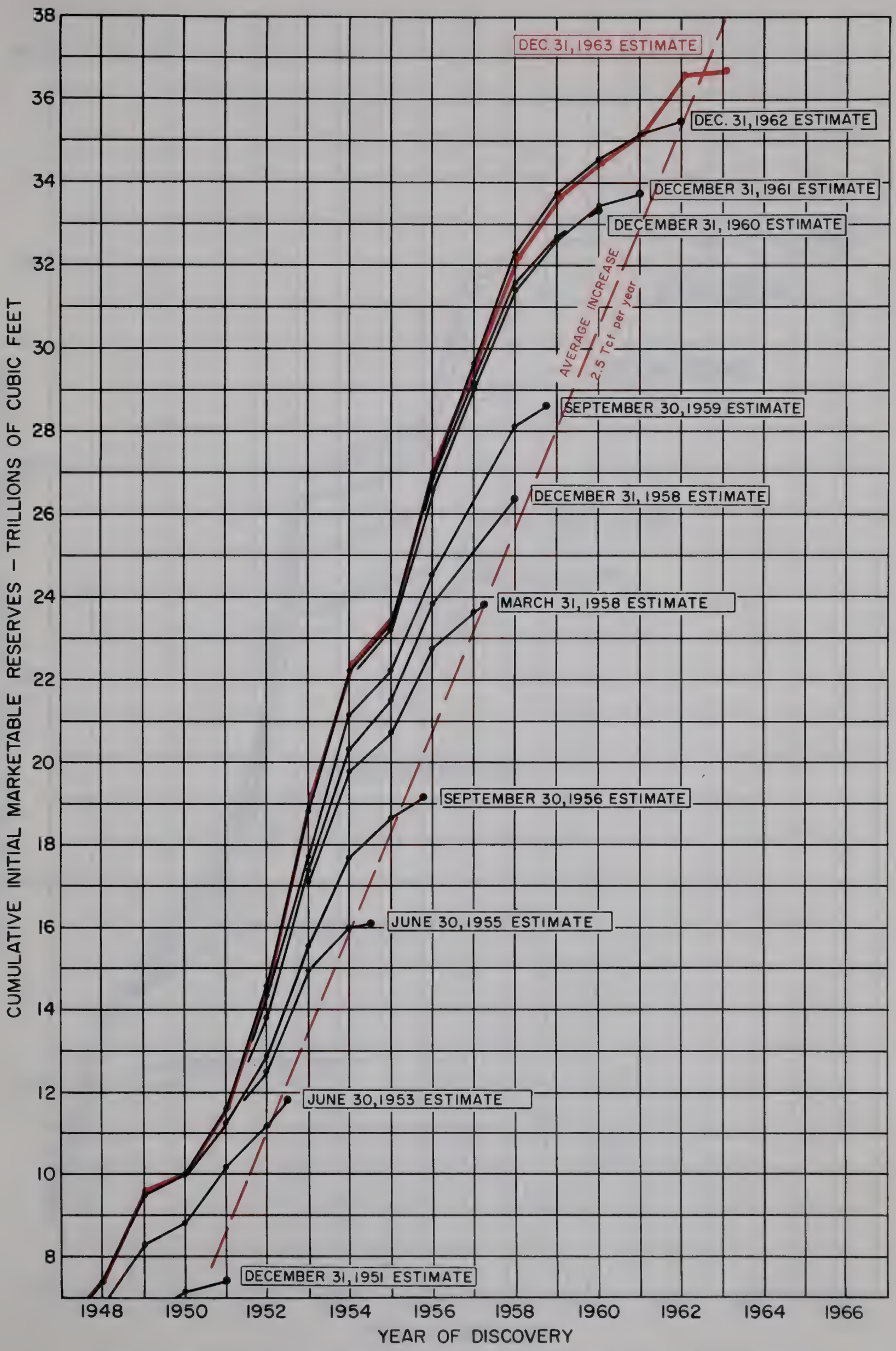
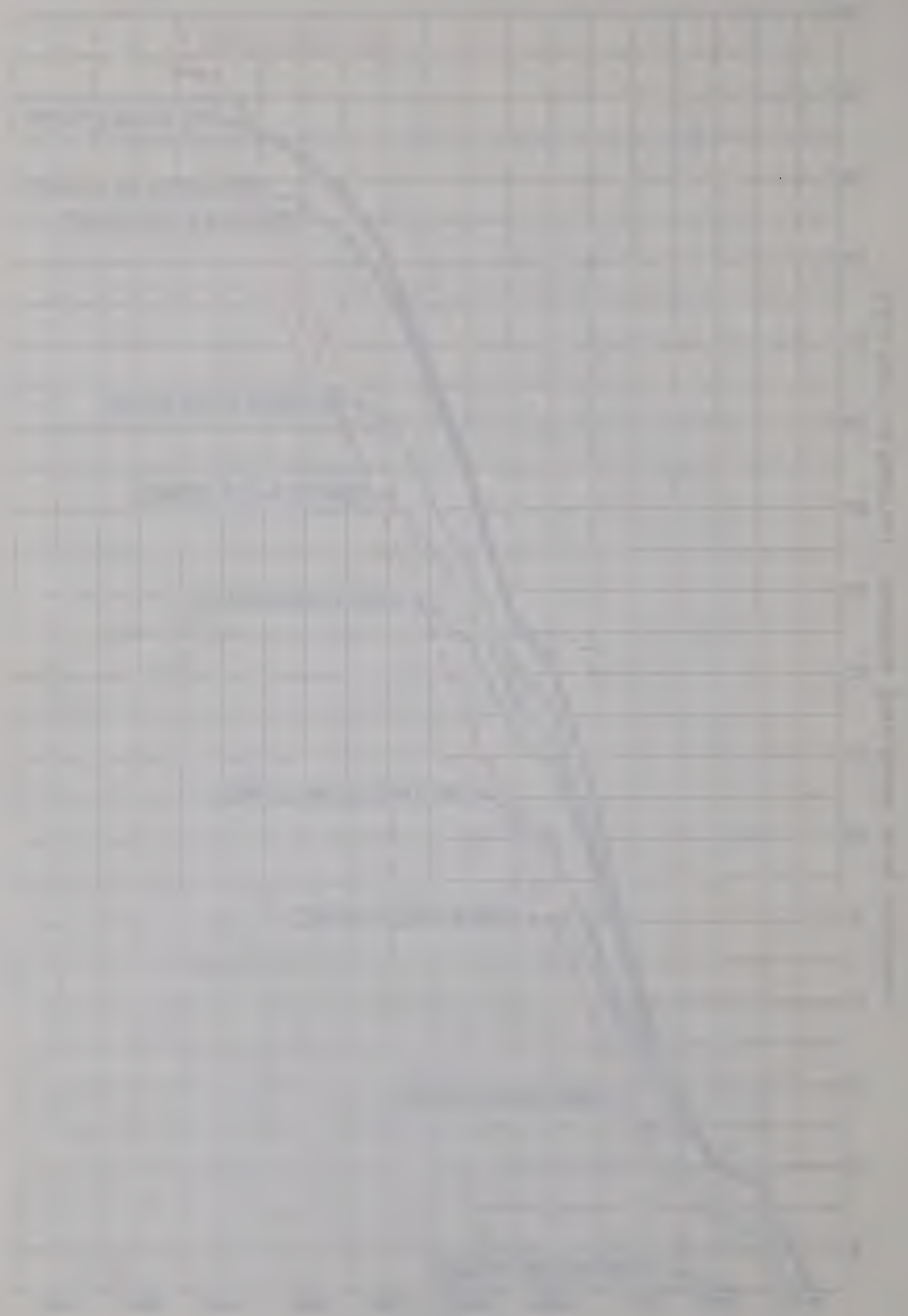


FIGURE V-2 GROWTH OF INITIAL MARKETABLE GAS RESERVES

OIL AND GAS CONSERVATION BOARD



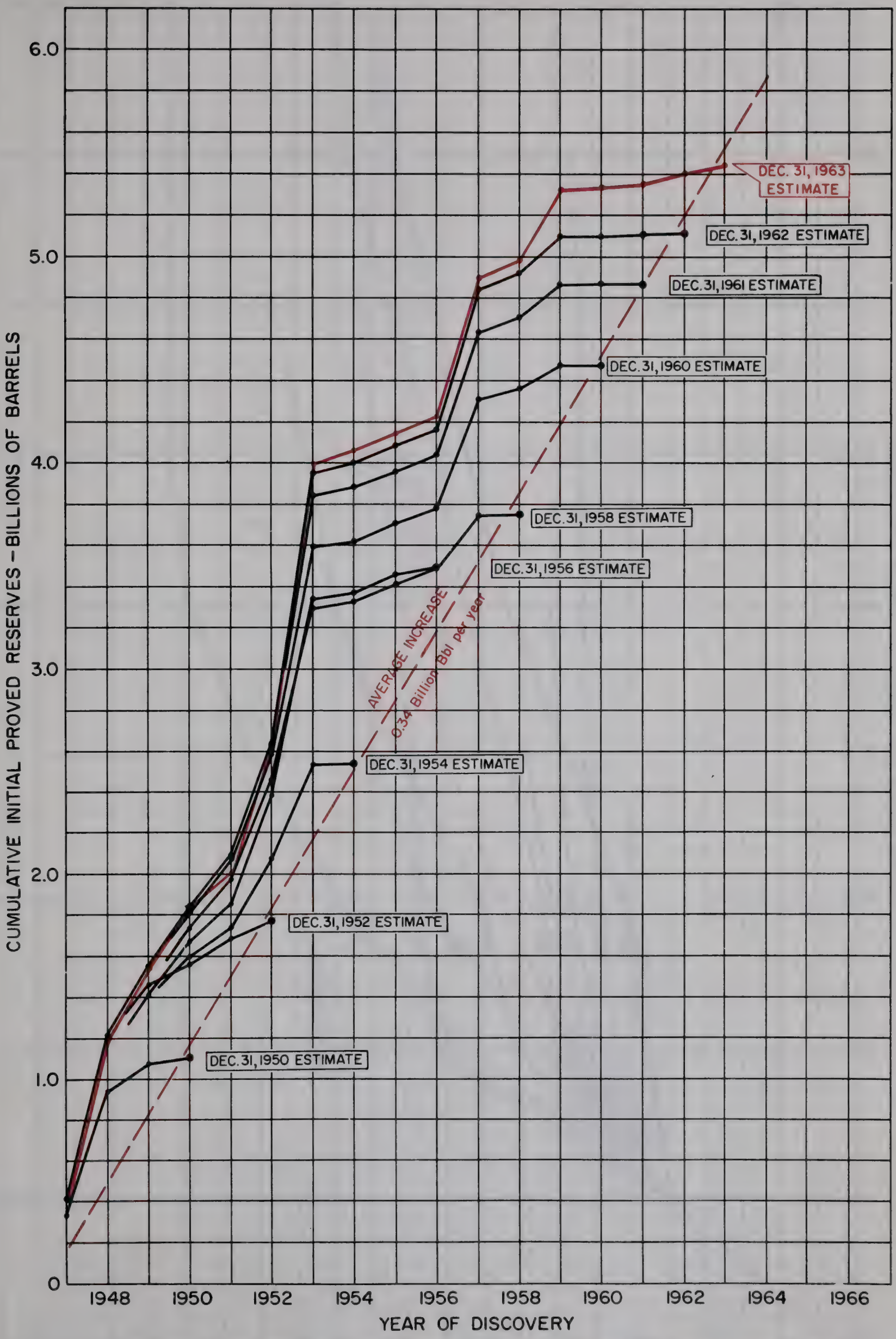
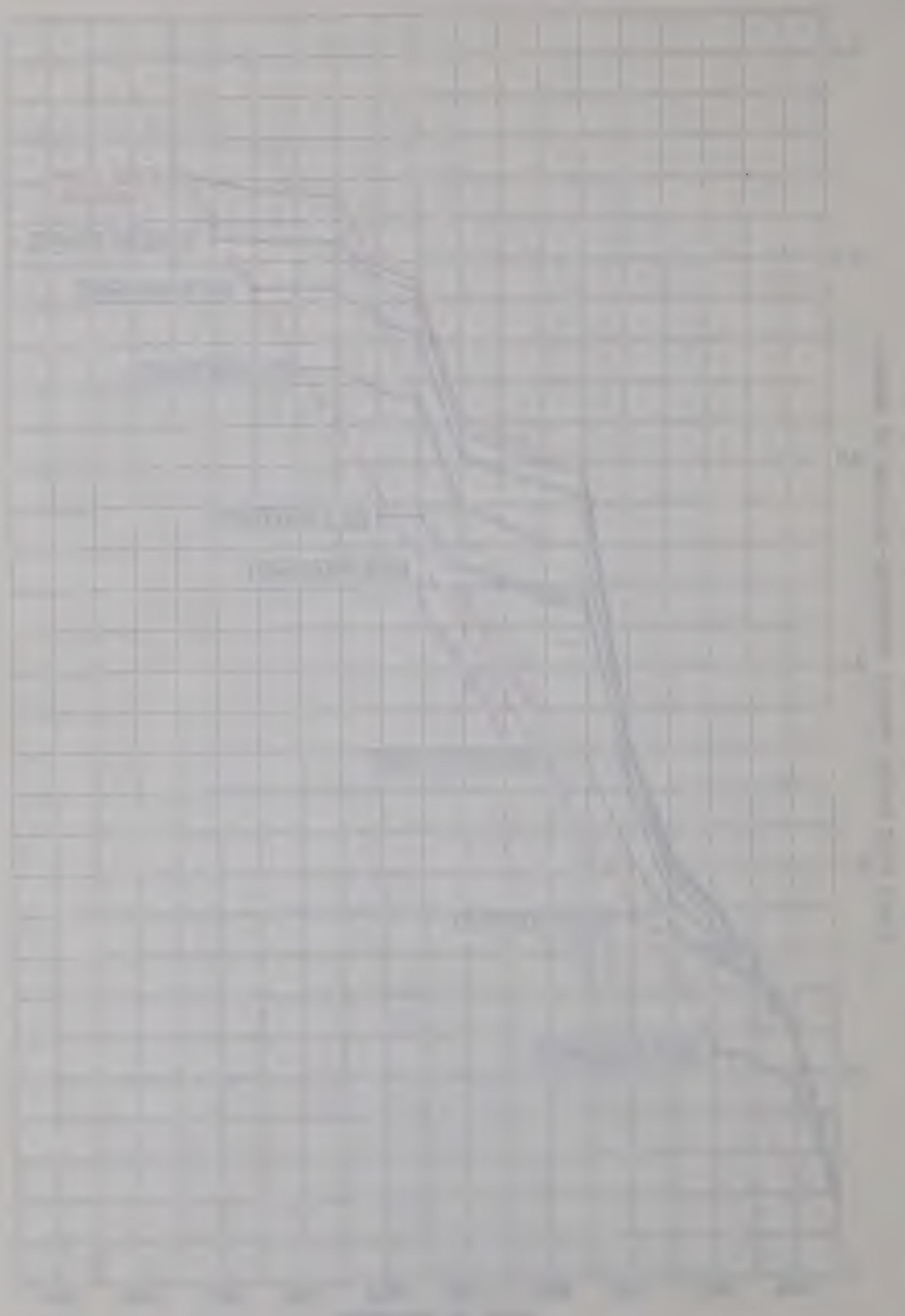


FIGURE V-3 GROWTH OF INITIAL PROVED CRUDE OIL RESERVES

OIL AND GAS CONSERVATION BOARD



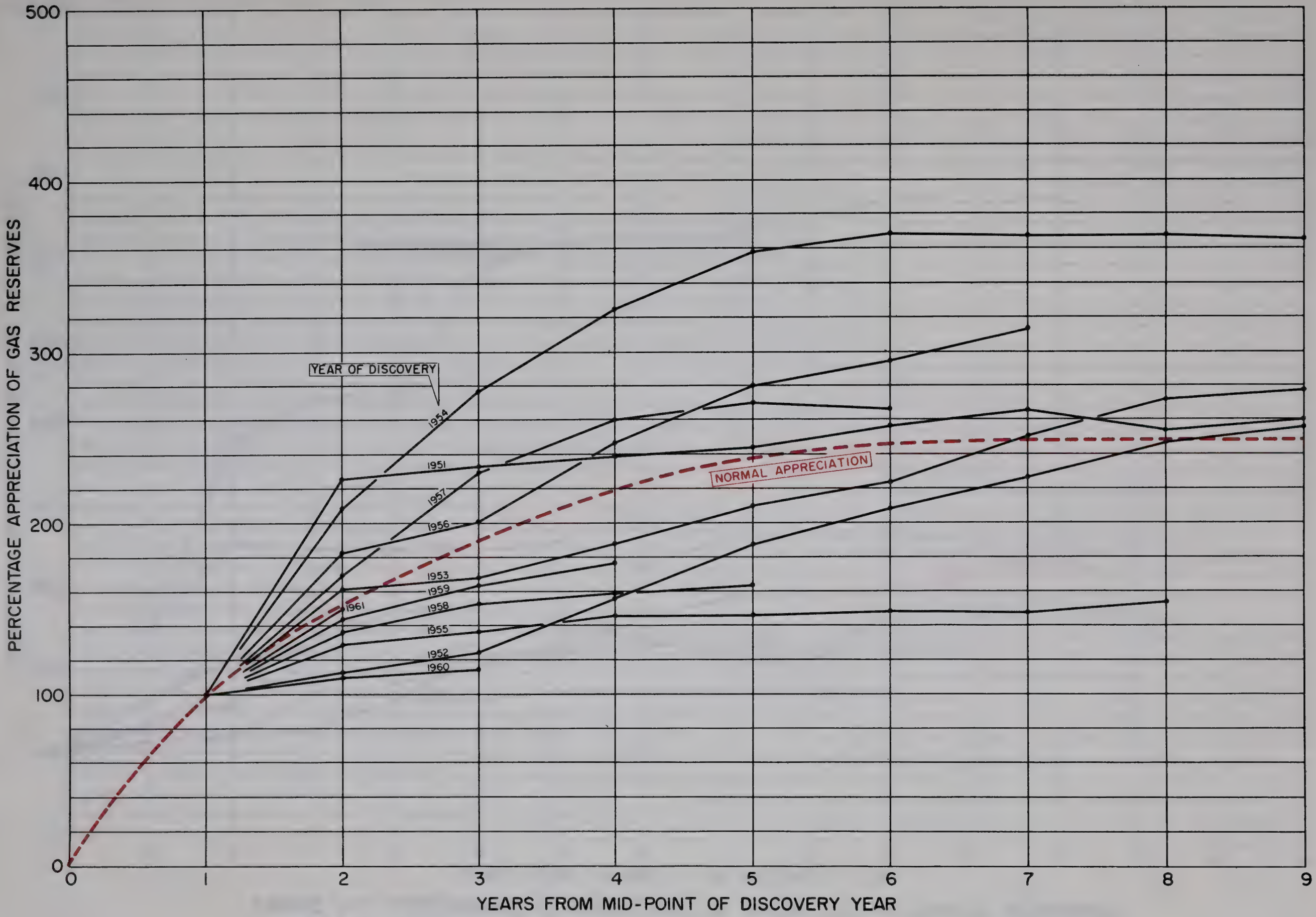


FIGURE V-4 PERCENTAGE APPRECIATION OF GAS RESERVES REFERRED TO RESERVES ONE YEAR FROM DATE OF DISCOVERY

OIL AND GAS CONSERVATION BOARD

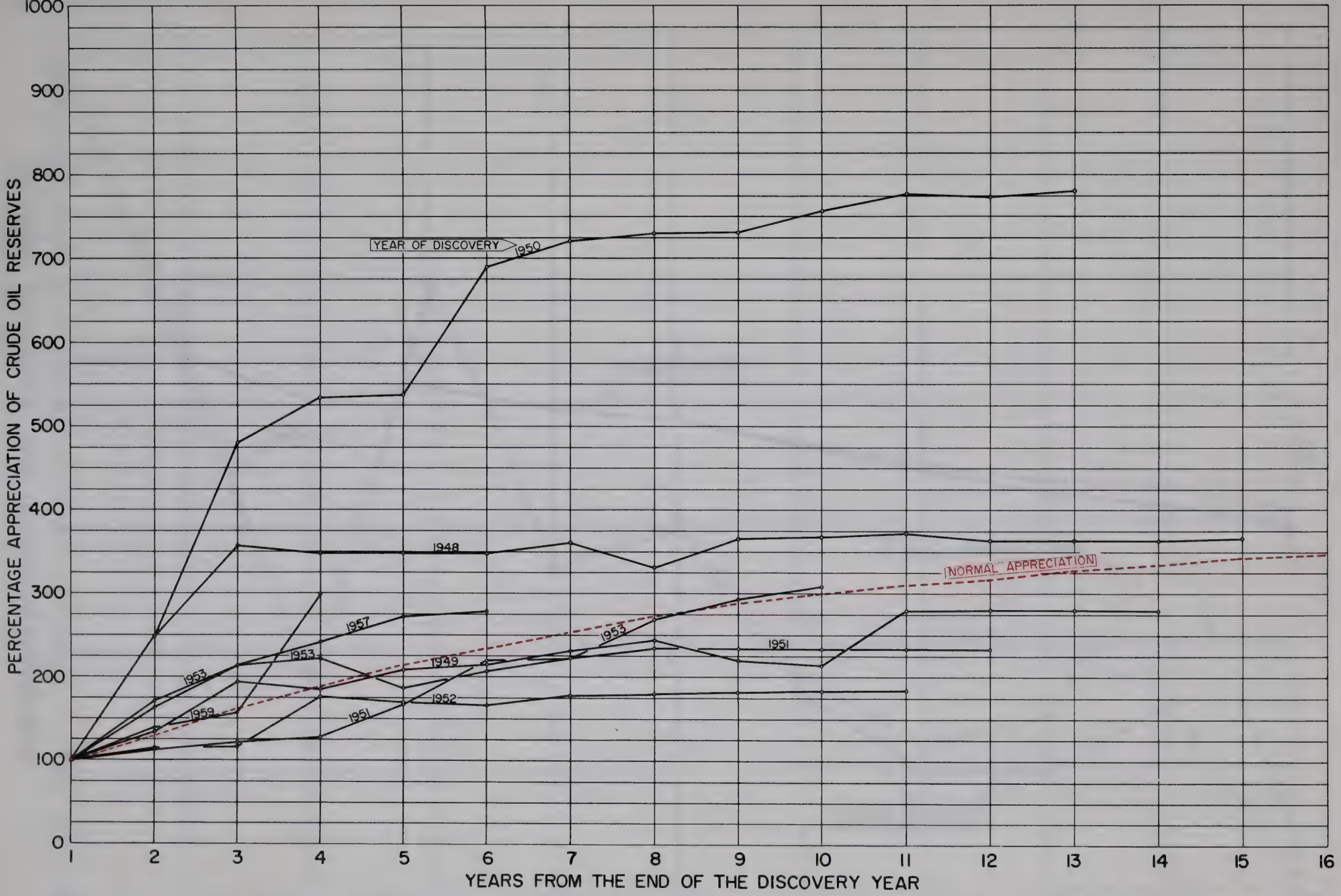


FIGURE V-5 PERCENTAGE APPRECIATION OF CRUDE OIL RESERVES REFERRED TO RESERVES AT THE END YEAR FOLLOWING THE DISCOVERY YEAR

OIL AND GAS CONSERVATION BOARD

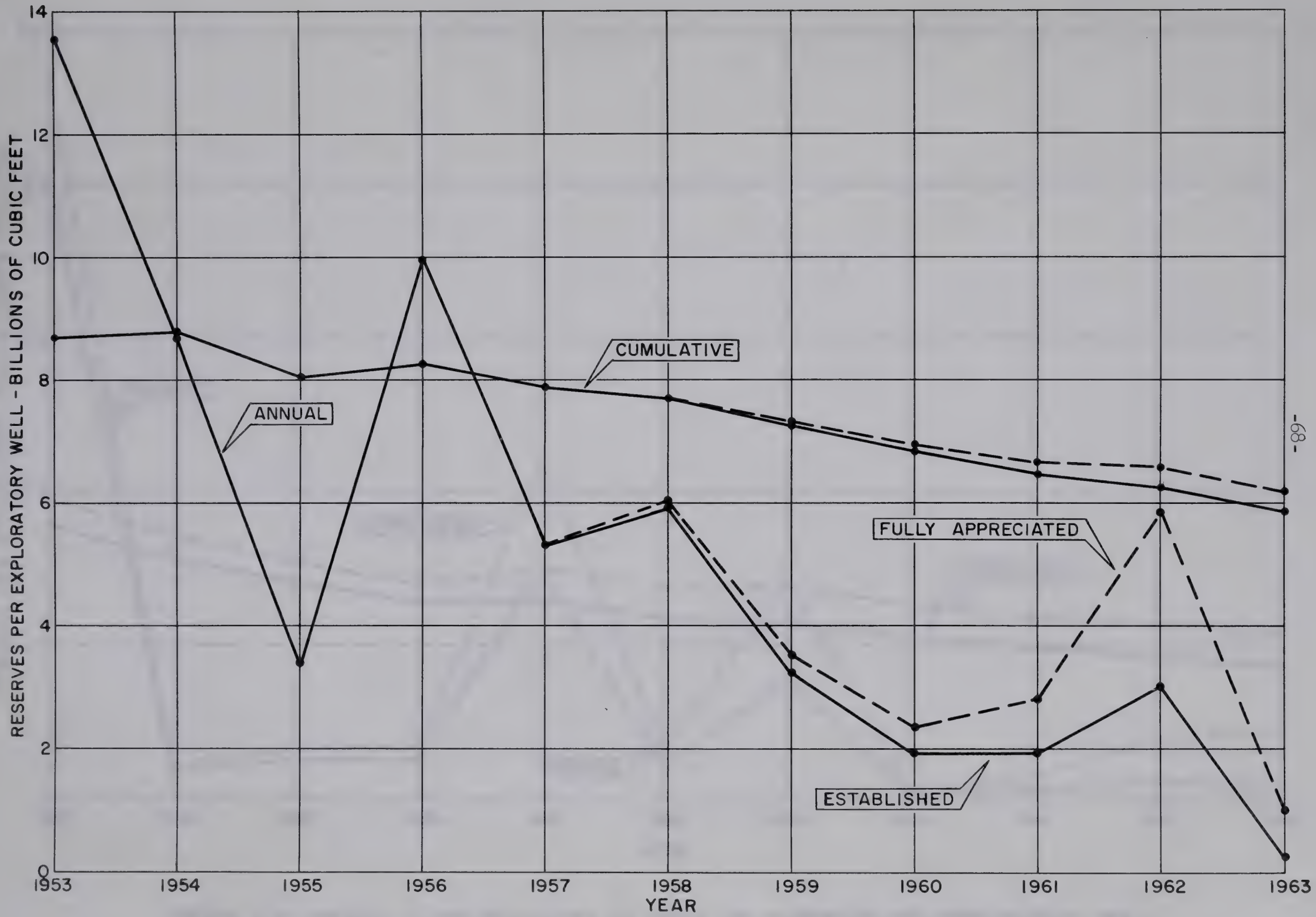
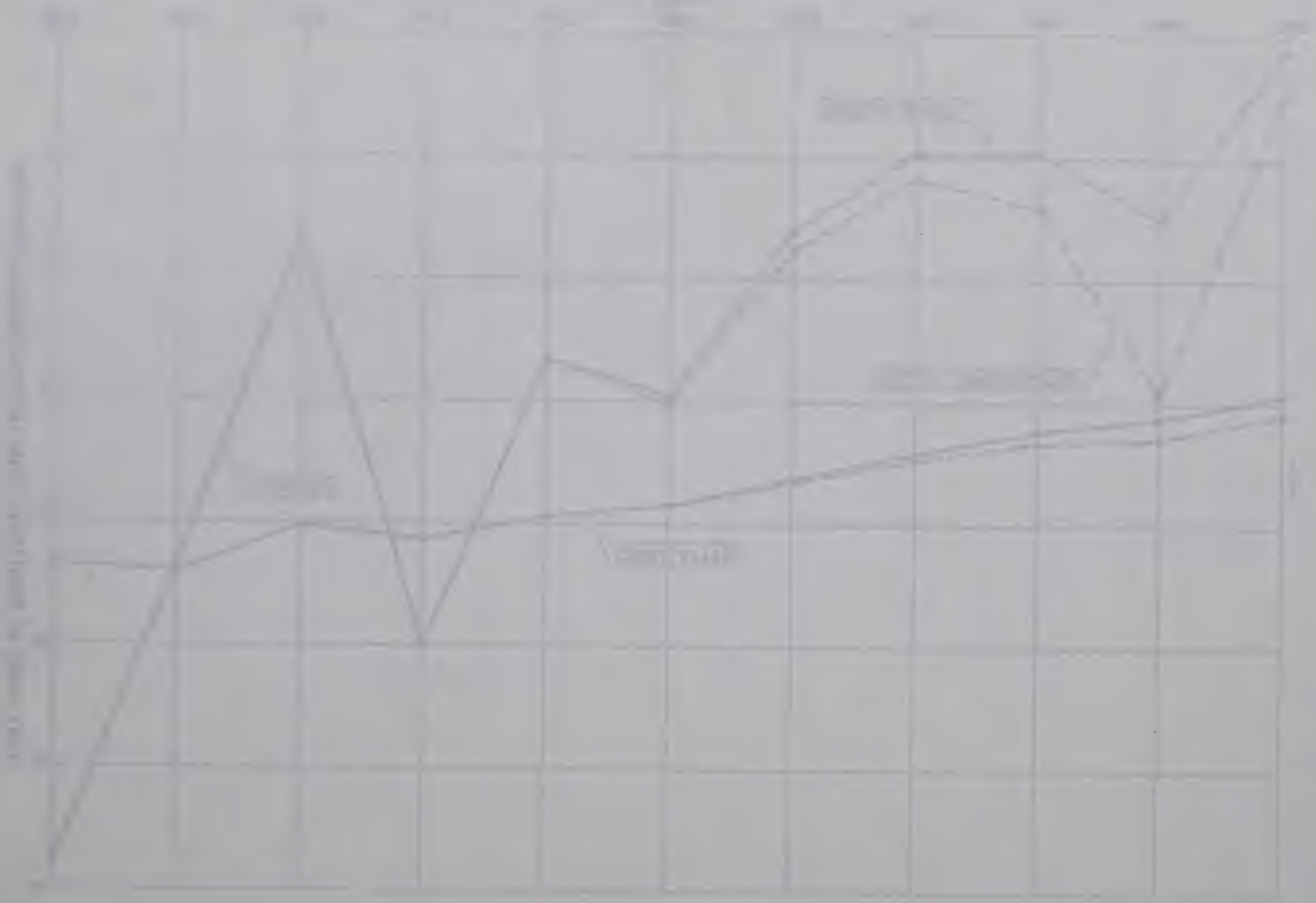


FIGURE V-6 TRENDS IN THE DISCOVERY OF GAS RESERVES PER EXPLORATORY WELL

OIL AND GAS CONSERVATION BOARD



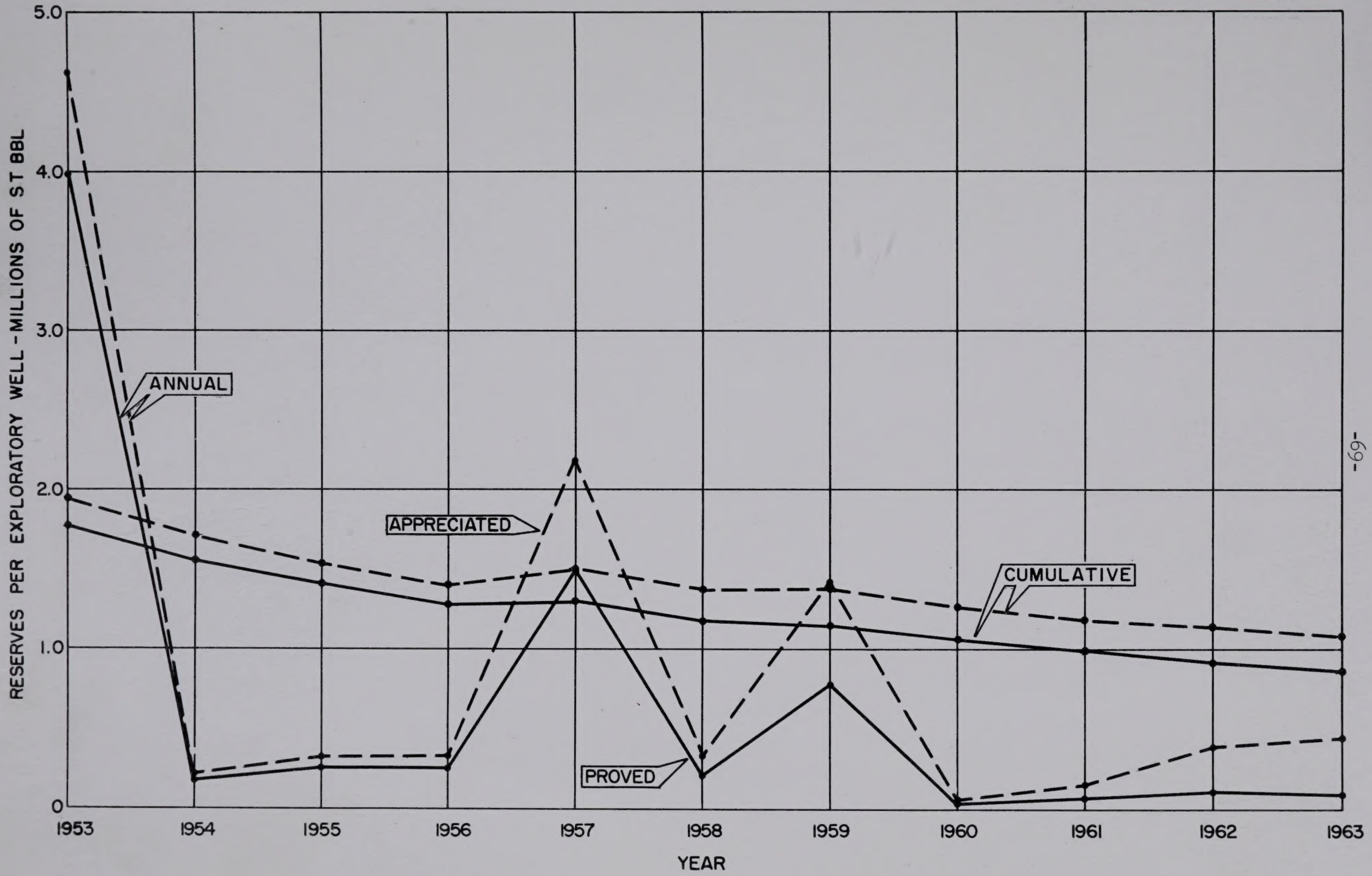


FIGURE V-7 TRENDS IN THE DISCOVERY OF CRUDE OIL RESERVES PER EXPLORATORY WELL

OIL AND GAS CONSERVATION BOARD

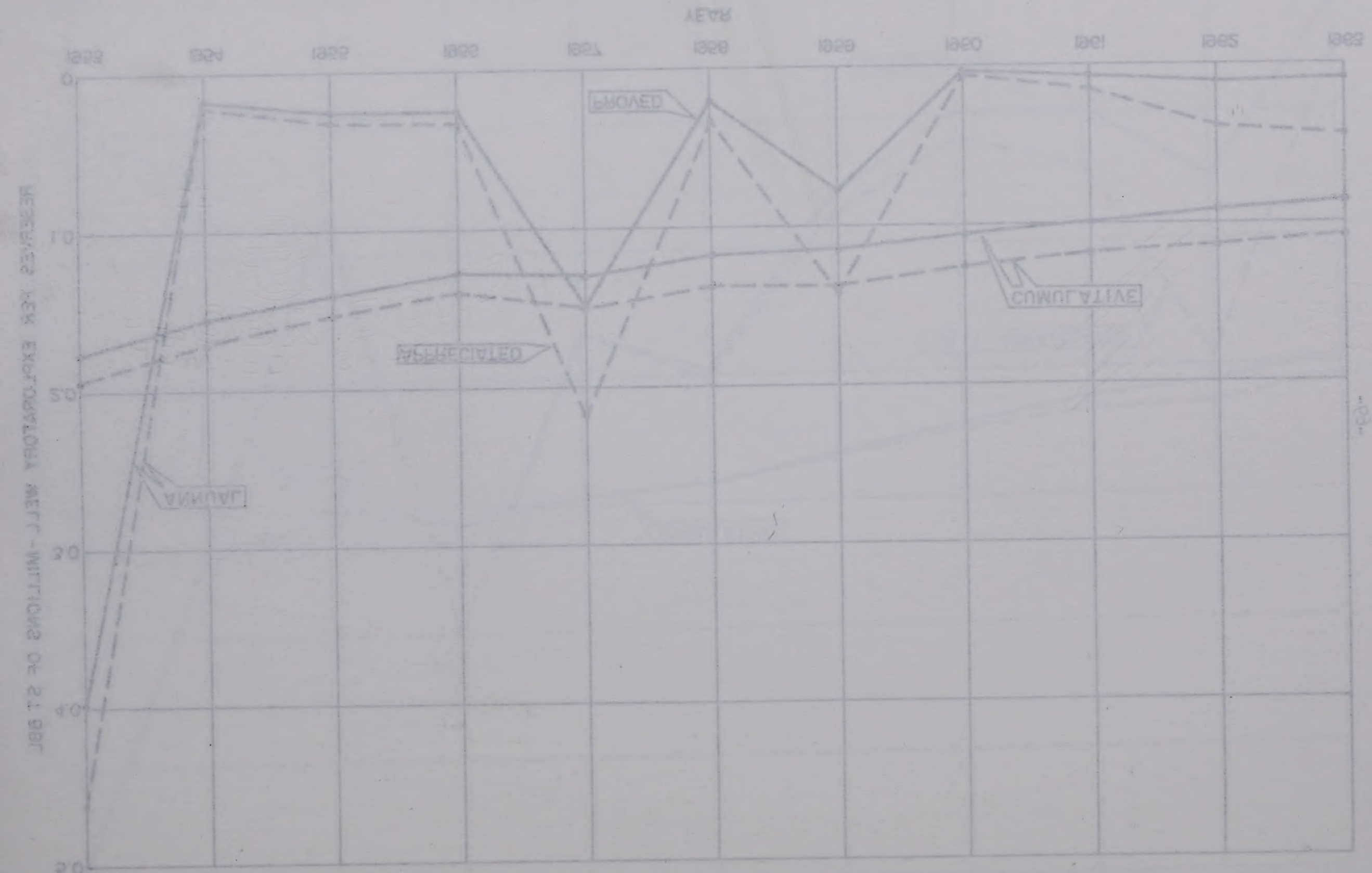



FIGURE V-7 TRENDS IN THE DISCOVERY OF CRUDE OIL RESERVES PER EXPLORATORY WELL